"A COMPARISON OF CLINICAL PROFILES OF PATIENTS WITH NORMAL AND ABNORMAL CORONARY ARTERIES: A ONE-YEAR CASE CONTROL STUDY IN KLES HOSPITAL POPULATION."

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ENDORSEMENT

This is to certify that the dissertation entitled **"A Comparison of Clinical Profiles of Patients with Normal and Abnormal Coronary arteries: A one-year Case Control Study in KLES Hospital Population."** is a bonafide research work done by **(REG NO. BG0117001).**

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ABBREVIATIONS

GLOSSARY	ABBREVIATIONS
AHA	American Heart Association
BMI	Body mass index
CAD	Coronary Artery Disease
CAG	Coronary Angiography
CHD	Coronary Heart Disease
CVD	Cardio Vascular Disease
DALYS	Disability Adjusted Life Years
DBP	Diastolic Blood Pressure
DVD	Double Vessel Disease
FHS	Framingham Heart Study
GBD	Global Burden of Disease
HDL	High Density Lipoprotein
IHD	Ischemic Heart Disease
LDL	Low density Lipoprotein
RGI	Registrar General of India
SBP	Systolic Blood Pressure
SVD	Single Vessel Disease
TVD	Triple Vessel Disease
WHR	Waist Hip Ratio

ABSTRACT

Background and Objectives

Cardiovascular diseases are on the rise in India. According to the WHO report in 2012, 17.5 million deaths occurred due to CVDs. Nearly 75 % of mortality was encountered in developing countries. There are many hazards for coronary mishaps. Case-control studies have described that key risk factors for CHD in India are dyslipidemias, smoking, diabetes, hypertension, truncal obesity, stress, diet, and a sedentary lifestyle To date, no single risk factor has been identified to be responsible for causing CVD. Rather, multiple interrelated factors seem responsible for its development. Our study aimed to study the prevalence of abnormal coronary arteries among the adult patients and further assess their clinical, metabolic profile and risk factors and its association to that of controls.

Methodology

A group of 602 consecutive patients whose coronary angiography was done were studied. Clinical examination with body mass parameters noted. Hemoglobin (Hb), serum creatinine, Lipid profiles with cholesterol, LDL, HDL, Triglycerides, Glycosylated hemoglobin (Hba1c) and random blood sugar (RBS) of all the patients was noted. A detailed analysis was done to compare the differences between normal and abnormal coronary angiographies.

Results

The study population comprised of 602 subjects with a mean age of 58.16 ± 12.41, ranging between 19 years to 92 years. Males were more at risk for coronary artery disease as per our study population. Hip circumference and waist-hip ratio were statistically significant, and increased waist-hip ratio was a risk factor for CAD. We found that lifestyle, exercise, vegetarian diet were not significantly protective against

the development of coronary artery disease as per our study. Smoking and alcohol consumption were not found to be significant risk factors for CAD as per our study. However we observed that tobacco chewing was found to be a significant risk factor for the development of CAD in our study. Presence of comorbid metabolic conditions like Hypertension and Diabetes Mellitus were both noted to be significant risk factors for coronary artery disease in our study. Random blood sugar, glycosylated hemoglobin, serum creatinine and hemoglobin were found to be significantly abnormal in the group with abnormal CAG indicating these parameters as individual risk factors for CAD (P Value <0.001). However, the difference in the LDL, HDL, Triglycerides and cholesterol was statistically not significant in our study. (P Value 0.752, 0.535, 0.837. 0.193). We noted that univariate logistic regression analysis showed a statistically significant association with coronary angiography with age, gender, creatinine, HBA1c, RBS.

Conclusion

We concluded that increased waist-hip ratio, tobacco chewing and comorbidities like hypertension and diabetes mellitus were risk factors for Coronary artery disease (CAD). Random blood sugar (RBS), Glycosylated hemoglobin (HbA1c), Serum creatinine and Hemoglobin were found to be significantly abnormal in diseased coronary angiographies indicating these parameters as individual risk factors for CAD. However, lipids did not have any bearing on CAD as per our study.

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INTRODUCTION:

Cardiovascular diseases are one of the most important causes of mortality across the globe. CVDs has not only accounted for mortality but is also responsible for increased morbidity among the adult population. Coronary artery disease (CAD) is among one of the most identified diseases, among the spectrum of CVDs. CAD alone accounts for about 40% of mortality among CVDSs death. However, over the years, there has been an observable decrease in the death rates due to good intervention programs. The risk factors associated were extensively studied in the landmark Framingham study.

Framingham heart study (FHS) 1957, pioneered the concept of "risk factors" in coronary heart disease (CHD). This revolutionary study showed the epidemiological relation of cigarette smoking, blood pressure and cholesterol levels to the incidence of coronary artery disease (CAD). This study helped in the dawn of old medical practice leading to newer medical intervention.[1] Majority of risk factors involved in CAD are those which can be controlled or modified. These include high BP; high blood cholesterol levels; smoking; diabetes; overweight or obesity; lack of physical activity; unhealthy diet and stress. The factors which are not modified are age, sex, family history and ethnicity.[1]

The beginning of the 20th century witnessed 10% of death all caused due to heart diseases. This further increased by 50% in the developed countries and 25% in developing countries.[2] Latest records by WHO predicted that by 2020, CHD would lead to 25 million deaths per year.[3] This prediction views Coronary heart disease to be a major cause of morbidity and mortality in about 33% of the population aged

above 35 years in both developing and developed countries.[4, 5] However, the prevalence report by Centre of disease control in the year 2010 showed CAD prevalence greater among 45-64 years group(19.8%) compared to 18-44years and 45-64 years(1.2%,7.1%).[6] Another study in Korea found the prevalence of occult CAD in 112 symptomless adults aged < than 40 years to be 11%.[7]

The prevalence studied in early CAD was greater in population with a strong family history (35%) compared to the general population(14%).[8] About 45% of cases with hypertension having a strong family history, have contributed to the prevalence of CHD globally.[9] This association was extensively studied in the third generation Framingham study on 1564 participants.[10] The study reported greater vascular toughness in normotensive adults of familial history than the normal counterpart.[10]

A study done by the American Heart Association (AHA) estimates that for patients with no risk factors for heart disease, the lifetime risk of having cardiovascular disease is 3.6% for men and less than 1% for women.[11]

Therefore, the present study aimed to evaluate the clinical profile, metabolic status and risk factors of patients with normal and abnormal coronary arteries.

The need for the study

The prevalence of risk factors, in particular, diabetes and hypertension in India should prompt to further investigate the condition of coronary arteries among this population. The early onset of CAD leading to premature death has not been studied enough among the Indian population.

The Southeast Asian population showed an early onset of CAD with a mean age of 53 years compared to the European population of 63 years.[12] Similarly, the South Asians particularly the Indians have also showed the early onset less than 40 years of age with CAD accounting for about 5% to 10% compared to other racial groups (approximately 1% to 2%).[13] The other risk factors predisposing to CAD are diabetes, hypertension, genetic factors, stress and obesity. These risk factors are much prevalent among Indians, thus making its population more susceptible to coronary artery disease.[13]

The impact of these many risk factors on the disease is quite well known in day to day practice. In spite of this, we have many patients in whom there are no obvious risk factors that can account for coronary artery disease. Considering this, we have undertaken this study to evaluate the profile of patients with normal coronaries and abnormal coronaries with CAD and compare their association with common risk factors.

AIMS AND OBJECTIVES:

- To evaluate the clinical profile of patients with normal and abnormal coronary arteries.
- To evaluate the metabolic profile of patients with normal and abnormal coronary arteries.
- To assess the risk factors in the development of abnormal coronary arteries.

REVIEW OF LITERATURE:

The term "coronary artery disease" encompasses a range of diseases that result from an atheromatous change in coronary vessels.[14] The earlier CAD was considered to be a simple, inevitable process of artery narrowing, ultimately resulting in complete vessel blockage (and MI).[14] Currently, the pathogenesis of CAD is explained by the process or spectrum of coronary plaques exists. These include, stable (lipid-poor, thick fibrous cap) to unstable (lipid-rich, thin fibrous cap) (see Figure 1).[14] the more unstable plaques have excellent chances to rupture leading to further events such as the release of prothrombotic and vasoconstrictive factors leading to complete occlusion of the artery. Homeostasis imbalance between prothrombotic and thrombolytic pathways can also contribute to rupture at the site, causing rupture of the vessel. Whereas, transient occlusion leads to ischemia and pain; permanent occlusion leads to transmural Myocardial Infraction.[14]

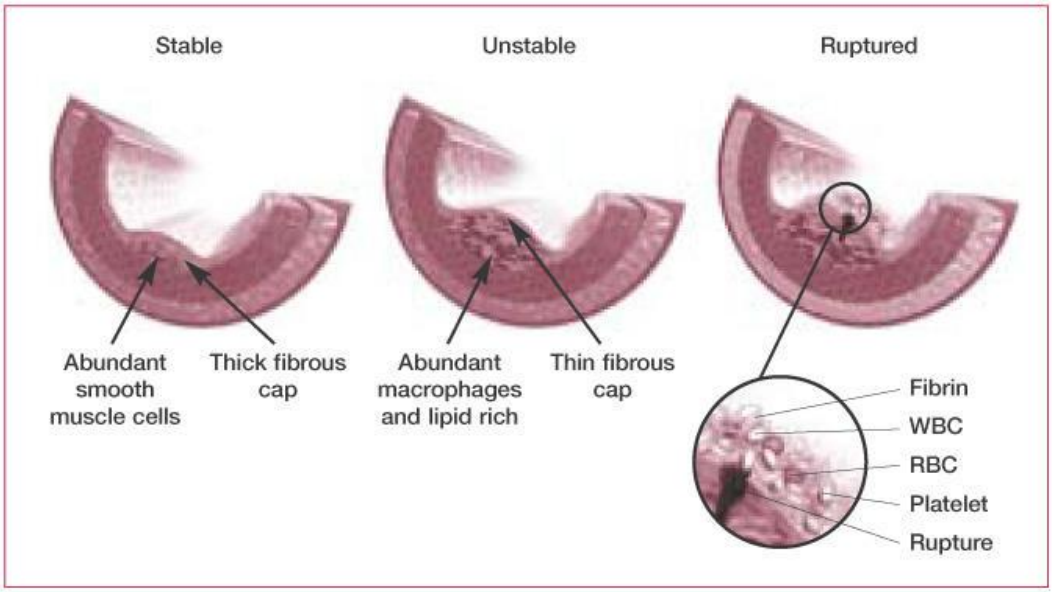

Figure 1: "An atherosclerotic plaque consists of a core of dead foam cells (lipid-engorged macrophages and smooth muscle cells) covered by a fibrous cap (a region of the intimal layer that has become thickened as a result of medial smooth muscle

cells depositing collagen and elastin fibers). The thickening artery wall of an atherosclerotic plaque gradually encroaches upon the luminal space and can eventually result in a restriction to blood flow. Unstable plaques, which are susceptible to rupture, are softer with a thinner fibrous cap. Plaque rupture triggers the formation of a blood clot, which can block the flow of blood through the artery. RBC: red blood cell; WBC: white blood cell".[14]

The burden of coronary artery disease: Global

Coronary artery disease is the most prevalent among Cardiovascular diseases across the globe. According to the WHO report in 2012, 17.5 million deaths occurred due to CVDs.[15] Nearly 75 % of mortality was encountered in developing countries. However, in developed countries, an observed decline in mortality rate was reported compared to developing countries.[16] The increase in the prevalence of CVDs over the years due to industrial evolution, suburbanization and modernisation are known as "epidemiological transition".[17] The impact of transition affected the developed countries of Europe and North America during the early 20 the century. Later this transition affected developing countries after 50 years.[17]

It was noticed that the prevalence of CVDs was affected at different stages of the epidemiological transition.[15] An era with communicable diseases with epidemics, under nourishment, transmittable diseases had observed an increase in infant and childhood mortality rate with a low rate of mortality from CVD(<10%).[18] The decline of pandemics and good health care systems witnessed a marked decrease in the death rate from infectious diseases but saw the rise of CVD with 10%- 35% mortality.[17] Further, the mortality from the age of degenerative and self- inflicting diseases was considered, due to CVD, accounted for about 35-65% of all deaths.[19] With

progressing years cancer and CVDs were the most evident causes of mortality, were CVD accounted for about> 40 % of all mortality.[20] Further, this era is followed by the age of less physical activity and increased weight gain leading to diabetes, increased blood pressure and abnormal lipid profile with greater CVD mortality rate.[17]

The reports of GBD (global burden of disease) in 2010 presented about 129 million DALYs (disability-adjusted life-years) contributed to IHD (Ischemic heart disease) across the globe. Thus, IHD was the foremost cause-specific disorder burden in the world.[21] In the same year highest age-standardised DALYs per 100,000 lost was recorded in Central Asia, Eastern Europe, South Asia and North Africa/ Middle East.[22] The opposite was recorded for sub- Sharan Africa, East Asia, Andean Latin America, and the developed countries. These countries contributed to the lowest age-standardised IHD burden rates.[21] World's highest age-standardised DALY rates were greater than 6000 DALYs lost per 100,000 was recorded in Belarus, Turkmenistan, Ukraine and Kazakhstan. [21]

The countries which showed lowest DALY rate, less than 1,550 per 100,000 was Sub-Saharan African countries and specific countries in the Andean Latin America (Ecuador and Peru), East Asia (Vietnam and Taiwan) and developed countries (France, Japan and South Korea). Change in the magnitude of age-standardised IHD DALYs per 100,000 was not observed in most countries between 1990 and 2010. But the frequency increased, >1,000 per 100,000 in Mangolia, Belarus, Ukraine, Kazakhstan Russia. South Asian countries showed >175 per 100,000 in Pakistan, Nepal, Bhutan, and Bangladesh.[21]

The burden of IHD among young adults was much higher among North Africa and South Asia, Middle East regions and sub-Saharan Africa. Among the males DALYs lost was 37%,32% and 29% respectively (sub-Saharan Africa, North Africa and the Middle East, and South Asia regions) whereas in females <50 years old DALYs lost was 30%, 26%, and 24%, respectively. About 66.6 % of the global burden of IHD affected the inhabitants of developing countries.

Within the World Bank income groups, greater variability in age-standardised IHD DALYs per 100,000 was viewed and recorded. The table below represents this variation

Table 1: DALYs across countries

Income	**Countries**	**DALYs lost per 100,000**
High	Chile	1,142 DALYS per 100,000
High	Finland	3,128 DALYs per 100,000
Middle	Botswana	1,752 DALYS per 100,000
Middle	Belarus	13,955DALYs per 100,000

These variations were attributed basically due to the IHD risk factors, challenging health status, along with the implementation of effective prevention programmes of IHD by few developing countries compared with developed countries.

The two risk factors which contributed to most IHD DALYs in all countries were a biological and dietetic risk. But the third risk factor varied among the countries. In Russia, alcohol consumption was the 3rd contributor of DALYs

(5,089,363 DALYs). In China, air pollution was the third risk factor for DALYs (8,803,667 DALYs) [21, 23, 24]

The statistics report in 2016 by Disease and Stroke Statistics update of the American Heart Association (AHA) presented, 15.5 million persons ≥20 years of age to have suffered from CHD in the USA.[25] A marked increase in the prevalence was recorded with age for both the genders. The statistics showed that nearly every 42 seconds, one American might suffer from Myocardial Infraction.[26] Within the spectrum of CVDs Ischemic heart disease (IHD) is one of the top causes of death and disease burden in the world.[27] Thus, resulting in approximately 8.9 million deaths and 164.0 million disability-adjusted life years (DALYs) globally in 2015.

The number of deaths in 2016, approximately 840,678 in the US was due to cardiovascular disease (approximately one of every three deaths). Mortality due to cardiovascular disease was high compared to all types of cancer and Chronic Lower Respiratory Disease or combined. The number of American adults who suffered CVDS between 2013 and 2016 was 121.5 million. The direct and indirect costs of total cardiovascular diseases and stroke were $351.2 billion. Where $213.8 billion in direct costs and $137.4 billion in lost productivity/mortality. Among the total population of the USA,57.1% of non-Hispanic (NH) black females and 60.1% of NH black males had one of the spectrum of CVDs.[28] In 2016, USA had reported Coronary Heart Disease is the topmost cause (43.2%), followed by stroke (16.9%), High Blood Pressure (9.8%), Heart Failure (9.3%), diseases of the arteries (3.0%), and other cardiovascular diseases (17.7%). [28]

The total number of deaths due to CVDS was 17.6 million per year in 2016 and is predicted to go higher, greater than 23.6 million by 2030. The expenses lost due to CVD and stroke between 2014 2015 was 14% of the total health expenses. Further, these expenses are predicted to rise to $749 billion in 2035.[28]

Burden of Coronary Artery Disease India:

The cardiovascular mortality rates have been reported by the Registrar General of India (RGI) periodically.[29] Based on the medical and death certificates related to the cardiovascular system from the 1980s and 1990s, the RGI reported CVD mortality rate of 15% to 20% in India.[30] In later years it was observed that the CVD mortality rate increased to 20.6% in 1990, 21.4% in 1995, 24.3% in 2000, 27.5% in 2005, and 29.0% in 2013.[29] These data were based on Rural health surveys which resulted in incomplete data.

Further using a validated verbal autopsy instrument, the million -death study group in collaboration with RGI studied and reported deaths for the year 2001-2003. [31] This study used the existing sample registration surveys of the Indian government and evaluated more than 120,000 death reports obtained from 661 districts of the country using a nationally representative sample of more than 6 million participants. The top cause of death among both genders in urban and rural and in developed and developing states of India was CVDs.[31]

Annually 10.5 million deaths occur in India, were CVD cause of death accounts for about 20.3% in men and 16.9% in women.[31] The data of RGI from 2010 to 2013 reported an increased mortality rate from CVD to 23% of total and 32% of

adult deaths.[32] A variation of mortality rates existed within the developed states, were rural region showed lesser (<10%) mortality compared to the urban region (>35%).[31]

The regions with poor development had low human development indices. These states include the eastern and northeastern states showed a lesser rate of CVD mortality compared to southern and western regions. Hence a direct relationship exists with the rate of CVD mortality and regional human development index. This confirms the presence of the epidemiological transition. [19]

The reports in 2016 presented, CVD attributed to 28·1% (95% UI 26·5–29·1) of total deaths and 14·1% (12·9–15·3) of total DALYS. The mortality rate and DALYs reported in 1990 was 6·9% and 6·3–7·4, respectively. A marked increase in mortality rate and DALYs are observed from 1990 to 2016.[33] IHD and stroke were the spectrum of CVDs, which contributed the most cause of disease among the population. IHD and stroke accounted for about 61·4% and 24·9% of total DALYS from cardiovascular diseases. IHD was the top most leading cause of DALYs in India and stroke was the 5th leading cause.[34] IHD contributed 17·8% (95% UI 16·8–18·5) of total deaths and 8·7% (7·9–9·5) of total DALYS, and stroke contributed 7·1% (6·6–7·5) of total deaths and 3·5% (3·2–3·9) of total DALYS.[35] Among the gender, men showed a greater proportion of mortality and DALYs from IHD compared to women. However, with stroke, both genders showed similar results.[35]

The prevalence of CVD in India has eventually increased since 1990 to 2016 by 25.7 million (95% UI 25·1–26·0) to 54.5 million (53·7–55·3).[35] The states which recorded the highest prevalence of CVDs was Tamil Nadu, Punjab and Kerala. This was followed by Himachal Pradesh, Andhra Pradesh, Goa, West Bengal and Maharashtra. IHD cases amplified from 10·2 million in 1990 to 23·8 million in 2016.

The number of stroke cases also augmented from 2·8 million in 1990 to 6·5 million in 2016.[36]

There was an overall rise in the standardized age prevalence of IHD among all ETL states from 1990 to 2016. A peak increase of prevalence of IHD was recorded in the high ETL state groups: Punjab, Kerala, Tamil Nadu and among the middle ETL state was Maharashtra. The stroke prevalence was recorded high in the higher middle ETL state, West Bengal and high ETL states were in Goa and Kerala.

The standardised age rate was not increased during 1990-2016 but the very rudimentary death rate of CVD showed an increase by 34 % from 1990 -2016.[35] This rudimentary death rate had amplified in both genders from 1990 to 2016 among all ETL state groups. However, the age standardised rate was increased in men among the low ETL state group. The death rate from CVD, when compared with age showed greater mortality in older age group >70 years than those of <70 years adults (2777 per 100 000 vs 116 per 100). However, the percentage of total deaths from CVDs was greater among people lesser than 70 years compared to older than 70 years (53·4% vs 46·6.[35]

The percentage of mortality from CVDs in individuals less than 70 years was maximum in the low ETL state group. The incidence of premature CHD is a major alarm in India and other developing nations.[18] The Million Death study has recorded high premature mortality from CVD. This study reported a total of 1.89 million annual deaths, where 0.59 million(31%) death happened at the age of less than 60years and 1.09 million(58%) at age less than 70 years. [25]

Common Demographic, Lifestyle, Clinical, Anthropometric and Laboratory Parameters Associated with Increased Risk Of CAD Sex and age

Gender and age, along with other contributing factors, play a pivotal role in the development of CVD. Two associated factors are the increased weight and hypertension along with age and gender contribute to CVD. [12, 37] The fact that plaque rupture is more likely to encounter in older women.[12] This may be due to Females are more prone to excess visceral fat deposition than men due to hormonal changes and lifestyle.[38] Another contributing factor is diabetes were, both women and men with diabetes have a greater risk of developing CVD. A report by the Canadian national health survey showed an indirect associated between socioeconomic status and obesity, which was a risk factor for diabetes. There was a strong association of diabetes with CVD observed among women than in males.[39] The low socioeconomic status, less physical activity and higher stress, with an increased burden of the family, contribute to the more female prevalence of women than men.[40] The amalgamation of these un-favourable features could also contribute to the increased peril of CVD in females with diabetes.[41]

Smoking

Active and passive smokers have contributed to the risk of developing CVD.[42, 43] A multi-ethnic study[44] showed the predictive factor for plaque formation. The predictive value was that the high levels of reactive C protein were found among the non- smoking individuals of CVD. This study also reported, greater risk of developing coronary atherosclerosis among smokers(70% higher) compared to non-smokers.[44] A 2 to 3 times of more risk is associated in people who smoke two to three packs of cigarettes. The physiology of developing CVD due to Smoking is

explained by an increase platelet adhesion, leading to endothelial injury of arteries attributing to rising in blood pressure. Thereby causing blood vessels to thicken and helping smooth cell proliferation. Smoking also attributes to increase in total cholesterol and Low-density lipoprotein (LDL) and decrease HDL(high-density lipoprotein) levels.[38] This risk factor can be controlled or decreased by various Anti-smoking campaigns, interventions and law.

Diabetes

According to WHO, estimates of the prevalence of diabetes across the world have been endlessly increasing from the past 3 decades. The estimates in 2014 were around 422 million adults across the globe with diabetes.[45] An increased prevalence of CVD was recorded among men with diabetes than in females in Canada and USA(7.5% vs. 5.8% in Canada11 and 13.6% vs. 11.2% in the U.S.).[41] The Framingham data showed the relative risk of developing CVD among women with diabetes was 3.57 times higher compared to males(relative risk 1.93). This risk in women was seen to be constant for risk of heart failure, intermittent peripheral artery disease as well as overall CVD.[46] The risk of acute MI was more strongly related to diabetes among women by the INTERHEART study [women OR= 4.26 (95% CI: 3.68, 4.94) VS men OR= 2.67 (95% CI: 2.43, 2.94)].[47] More studies in recent times have shown the influence of diabetes on the risk of development of CHD higher in females than in men. This evidence was even strengthened by a meta-analysis.[48] This meta-analysis included a large sample of 858,507 subjects with 28,203 incident CHD events. They found that the relative risk (RR) of developing incident CHD, was 1.44 times greater in women than in men. Another study by Huxley et al also recorded a 1.54 times of increased risk of fatal CHD among females with diabetes than males.[49]

Hypertension

The other prime risk factor contributing to the development of CVDs is SAH (Systemic Arterial Hypertension). This factor is dependent on the stage of hypertension, organ damage and its accompanying clinical situations.[50] In most of the developing countries, SAH is the significant cause of systolic heart failure.[51] This risk factor promotes atherogenic plaque formation, thereby increasing the risk for cardiovascular events to happen by two to three times.[51] In cases of Non-refractory hypertension, controlled by antihypertensive drugs, has a positive affect on cardiovascular morbidity and mortality.[51] A study in the Rio Grande do Sul State witnessed an increasing prevalence of SAH from 2002 to 2014.[38] This upsurge was attributed to increased prevalence of obesity, overweight, and dyslipidaemia, which contribute to an elevation in blood pressure.[38]

Obesity

Obesity as a risk factor for CVD promotes chronic inflammatory process, dyslipidaemia, SAH and diabetes.[52] Metabolic syndrome is now a global epidemic in the world.[53] According to the records of Brazils health Secretary, 2 million individuals with metabolic syndrome and overweight disorders are at 3 times greater risk of developing MI and stroke.[38] The etiology of overweight are less physical activity, depression, anxiety, excessive eating, unhealthy lifestyle etc. These ultimately lead to the risk of developing diabetes and CVD. Obesity is considered to be more prevalent among females than males.[38]

Family history

A positive correlation is found with a family history of an unexpected death or premature heart attack, diabetes, SAH and dyslipidaemia. This is highly significant, especially in first-degree relatives indicating a high risk for coronary disease.[51] Along with the family history and genetic factors, sedentary lifestyles and stress have predisposed for developing CVD.[51, 54]

Sedentary lifestyle

Prevention of CVD can be thoroughly achieved by engaging oneself to physical activity and adapting to healthy eating habits.[54,38] Sedentary lifestyles cause high cholesterol level, hypertension, obesity, diabetes etc. leading to a risk of developing CVD.[54] Additionally, these risk factors, directly contribute to atheroma plaque growth. [54]

Dyslipidemias

High cholesterol levels are one of the important risk factors contributing to CVDs. The high levels of cholesterol are usually treated by statins which in turn helps in suppressing the plaque formation.[55] Among the six important risk factors (smoking, SAH, sedentary lifestyle, obesity and high glucose levels and dyslipidaemias) dyslipidaemias contribute to CVDs. Where dyslipidaemias is the most significant factor for mortality from CVDs seen in developing countries.[12]

Historic evolution of the understanding of the pathophysiology of CAD

Studies at epidemiological levels have considered significant as they gather evidence for the factors that influence CVD and prompts for chances for its

prevention. The inception of the Framingham study was in 1948 with its first participants. During this period around at the 1940s, CVD had roared to be the leading cause of mortality among Americans(1 in 2 deaths).[56] Majority of Americans by then had accepted premature death from heart disease as inevitable due to lack of understanding of the treatment and prevention. Franklin Delano Roosevelt, the president of the USA from 1933 to 1945 was among the population, a victim of CVD who suffered heart failure because of undiagnosed and untreated risk factors.[57] Despite medical records of Roosevelts in 1932, showed variation in Blood pressure (140/100mmHg), no medical treatment was started.[58] Because of the poor understanding of the President's cardiovascular health the very next year, Roosevelt chose an ENT specialist as his personal doctor. Admiral Ross McIntyre was the president's personal physician. This choice was made as headaches and sinus problems were considered to be a prime concern during that period.[59]

Later in 1935 to 1941, the president started to show a steady increase in BP from 136/78 to 188/105 mm Hg.[58] This blood pressure was considered to be not normal for his age. In spite of this observation, the President's personal doctor considered him very normal and healthy. The illness of Roosevelt's was noticed by British Prime Minister Winston Churchill when he visited the White House on May 1943. Looking at the US president's health, the British President recommended his own physician to evaluate the US president.[60]

In 1944, daughter of the then US president, Anna Roosevelt took a second opinion on her father's health where he was admitted (Bethesda Naval Hospital) for diaphoresis, abdominal distension and dyspnoea on exertion.[61] Cardiologist Dr. Howard G. Bruenn, who was one among a hundred such specialists in the entire

nation, examined the President. The findings noticed by Dr Bruenn was that the president appeared to be "slightly cyanotic," with "blood pressure 186/108" mmHg and a chest x-ray showing an "increase in the size of the cardiac shadow." It was then this cardiologist gave the President his first diagnosis of "hypertension, hypertensive heart disease, and cardiac failure".[57] This incidence embarked the need for future studies. Hence Framingham study came into limelight to understand cardiac related diseases and its associated risk factors.

A summary of the findings of landmark studies: (Framingham heart study FHS, to present).

The sole purpose of FHS started by the public health service the US in 1948 was to evaluate and study the risk factors and epidemiology of CVDs.[62] The study design was taken over by the National Heart Institute (today is known as the National Heart, Lung, and Blood Institute) in 1949. The town of Framingham was chosen as it had to be good for community based tuberculosis study. [63] The enrolment and examination of the Original Cohort of the Framingham Heart Study started in the year 1948. These cohorts were two-yearly examined and have been followed up since then. After 23 years, the offspring cohort was involved in study.[64] Since 1971 to present, all clinical examinations of the original cohort and their offspring are conducted and sponsored by National Institutes of Health contracts (currently NO1-HC- 25195). These are programmed according to protocols approved by the Boston University Medical Center Institutional Review Board.

At the end of the 20th century, the investigators of Framingham study urged to explore the genetic aspects and environmental risk factors for CVDs. In 2002, the new participants were involved in the study, the third generation of the cohort. These

cohorts were the children of descendants of cohort participants.[65] The investigators gave importance to 879 large, extended families that already had multiple participants in the study. The disadvantage observed among the cohort was that it was dominated by whites of European descent. In 1994, Omni 1 cohort was appointed, which included 506 minority residents of Framingham. Ten years later, around 410 minority participants were added through Omni 2 cohort.[65]

In the year 2006, the National Institutes of Health-funded the SHARe project (SNP Health Association Resource), which supported genome-wide genotyping across all of the Framingham cohorts. This data contributed to the study and identified several common genetic variants prompting the risk of CVDs.[66]

Andersson C et al[10] tested whether hypertension was inherited from the descendant's hypertensive parents and their children. Hypertension may show arterial stiffness before they actually become evident clinically. Based on this hypothesis, this study, it compared arterial tonometry in 1564 normotensive Framingham Heart Study Third generation cohort participants. The mean age of the participants was 38 years and had their parents already enrolled in the Framingham Offspring Study. The descendant's hypertension was associated with greater offspring mean arterial pressure ($P<0.01$). Also, an association for either of the parent with hypertension and their offspring was statically significant. Carotid-femoral pulse wave velocity and augmentation index displayed similar dose-dependent relations with parental hypertension in sex, age, and height-adjusted models, but associations were attenuated upon further adjustment. Offspring with at least one parent in the upper quartile of the augmentation index and carotid-femoral pulse wave velocity had significantly higher values themselves ($p\leq0.02$). The results of this study inferred that a normotensive

adult, displayed greater arterial stiffness if their parents were hypertensive. These findings had given an evidence to the heritance of hypertension.

Further, a study by Ferencik et al[67] 2017 studied and compared the use of coronary artery calcium CAC and coronary dominance detected by cardiac tomography (CT) with traditional Agatston score (AS) in predicting incident major coronary heart disease (CHD). The participants from the Offspring and Third generation cohorts of the Framingham Heart Study were assessed for AS and the presence of CAC per coronary artery, per segment and coronary dominance by CT. The chief outcome assessed was mortality and CHD. A total of 1268 subjects were enrolled with 63.7 % of men with a mean age of 56.2±10.3 years and had AS >0 with no previous history of major CHD. During the follow-up time period (7.4 years), a total of 42 major CHD events were recorded. The coronary arteries (hazard ratio: 1.68 per artery) and the proximal coronary artery (HR 2.59) presented CAC and were associated with major CHD events. Hence this study showed that the predictive value of CAC distribution along coronary arteries and proximal dominant artery in major CHD events among the study population.

Most relevant Studies:

Pinaire J et al[68] 2019 studied the hospital burden of CAD through MI events and intervention (Percutaneous Coronary Intervention (PCI) in the French Prospective Payment System (PPS). The subjects aged 20-99 years were taken from the PPS database and assessed for a period of 6 years. The total of 678,021 subjects was identified, and 900,121 were admitted. Among them, 215,224 had an MI and a PCI.

The data record of hospital admission showed that there was a marked rise by 25 % each year in the MI cases, especially in young females. However, in men, their hospitalisation had increased, but they were older. Almost 27% of subjects were readmitted, with 3.3 % of in-hospital mortality and a 15 % decline was seen during the study time. The subjects who were aged >40 and 80 had the highest mortality rate during their hospital stay. Hence, these study results infer the increasing burden of CAD among the France population.

A hospital-based cross-sectional study by Kumbhalkar et al [69] 2019 evaluated the young adults for IHD through clinical assessment, lab investigation and angiographic profile. This study had 70 subjects with IHD, the male was ≤35 years and females were ≤40 years. Along with clinical, lab investigation and angiographic profile and family history, other risk factors such, homocysteine, plasma fibrinogen and lipoprotein (a) were assessed in 44 subjects. Other risk factors such as hypertension, tobacco and gutkha, diabetes, smoking and family history of CAD were recorded. Among these risk factors, tobacco and gutkha chewing was recorded in the majority of cases (35.7%). Majority of subjects 77.6% of them had anterior wall MI and 61.4% had moderate left ventricular dysfunction on echocardiography. Nearly the study subjects showed a marked increase in the lipid profile whereas the other risk factors, Lp (a), homocysteine, and plasma fibrinogen was seen to be increased in 61.4%, 77.3%, and 18.2% of patients. The coronary angiography, findings revealed a majority of subjects with the single-vessel disease (57.1%), double vessel disease in 11.5 % and triple vessel disease in 7.1 % of study subjects. There was a strong positive family history of CAD, hyperlipidemia among the significant CAD group than the nonsignificant CAD group. Hence, this study results showed that the Indian

young males, especially the south Indians, were at increased risk of developing CAD early in onset.

A multi-centre case cohort study by Ricci C et al[70] 2018 aimed to study the association of alcohol at baseline and over a lifetime to non-fatal and fatal coronary heart disease (CHD) and stroke. This study involved 32 549 participants across 8 countries. This study included subjects who had no evidence CVD, an incident CVD and a sub-cohort to compare. The results of the study showed733 fatal strokes, 5855 non-fatal strokes, 1699 with fatal CHD and 9307non-fatal CHD event. An inverse association of baseline alcohol 12g/day (HR 0.94) with non- fatal CHD was noticed. But alcohol showed a positive association with types of strokes. Therefore, alcohol consumption was associated with the spectrum of CVDs, and alcohol was identified as one of the major risk factors of CVDs.

Sinha et al,[71] 2017 studied the clinical presentation, risk factors hospital outcome along with angiographic profile among young aged adults with a first acute attack of MI. The total number of 1,116 subjects aged ≤ 30 years with ST-elevation were studied. Majority of subjects had smoking history 78.55, family history of CAD in 46.8%, overweight in 39.1 % and less physical activity in 38.7% and stress in 29.6%. The proportion of single-vessel disease was about 80.6%, the double-vessel disease was 12.9% and left main artery involvement was 3.2%. The most common frequent artery involved was Left anterior descending (LAD) in almost 58.1% of the study population, followed by the right coronary artery in 28.2%. The mortality rate was 2.8%. Hence this study showed that the onset of CAD was much early in life, especially in males with an associated risk factor of smoking.

A descriptive-analytical study by Zamani et al[72] 2017 aimed to compare the risk factors of coronary artery in patients with ectatic and stenotic lesions. The study population was 300 patients with ectatic (group 1) and stenotic lesion (group 2) confirmed by angiography. The proportion of ectatic lesions subjects were 22%, and stenotic lesion subjects were 78%. Majority of population were Male patients 74.2% with a mean age of 58.7 years, and the male patients with stenotic lesions were 54.3% wit mean age of 60.7 years. The angiographic results showed that 42.4 % of the ectatic lesion were seen to be in the carotid artery, whereas 44.4% of them had a stenotic lesion in coronary arteries. Majority of patients had a previous history of MI and family history of CAD with a history of smoking, diabetes and hypertension. Hence the type of lesion was shown to be associated with risk factors such as diabetes, previous history of MI and smoking.

White J et al[73] 2016 study used Mendelian randomisation analysis to assess any causal role of urate on coronary heart disease risk. This study analysed the plasma urate and its risk of CHD through metanalysis of observational studies. Further, a conventional Mendelian randomisation approach was used to see a causal relevance using a genetic instrument based on 31 urate-associated single nucleotide polymorphisms (SNPs). A total of 17 prospective observational studies were meta-analyzed were, 166 486 individuals; 9784 coronary heart disease events were studied. Greater urate concentration was found to be associated with CHD with an odds ratio of 1.07. The analysis showed a positive relation of urate concentration with the risk of developing CHD.

A cross-sectional study by Gus I et al[38] 2015 evaluated the risk factors (RFs) and prevalence of coronary heart disease among the people living in the Rio Grande

do Sul State (Brazil). A comparison of the 2015 report was made with that of 2002. This study had included 1,056 healthy adults and analysed for systemic arterial hypertension (SAH), obesity, dyslipidaemias, smoking, sedentary lifestyle, family history and diabetes mellitus. The data across 19 cities of brazil was analysed from the 2002 study. The study population comprised 26% of older individuals, with 57 % of them being women. The proportion of risk factors of a sedentary lifestyle, history family, smoking, obesity, dyslipidaemia, SAH, and diabetes was 44%, 50%, 23%, 68%, 43%, 40% and 11% respectively. The 2002 study compared to this study showed that the prevalence of active smoking and sedentary lifestyle had reduced, but the prevalence of hypertension, obesity and dyslipidaemia had increased.

Blais C et al[74] 2015 study evaluated the incidence of CHD and its mortality among the general population of Quebec province with no prior history of CHD. The prevalence of CHD was 9.4% in the year 2012 -13. When compared with the data of 2000-1 and 2012-13, the age-standardised prevalence had shown to rise by 14%. There was a decrease in the mortality rates by 46% and 26% along with age-standardised incidence. The percentage of CHD death or sudden cardiac death among the population was shown to be decreasing during the study duration. Hence, this study population showed a marked decrease in the prevalence of CHD in latest years compared to previous years.

A systematic meta-analysis by Zaman M et al,[75] 2013 studied the incidence and prognosis of coronary disease among the South Asian population. A total number 111555 with incidence, 14 531 with prognosis, and 8251 were from the ACS cohort. According to the meta-analysis of 9 studies, South Asians had shown an increased incidence of CAD compared to the western population. The 10 studies on prognosis

showed good prognosis among South Asians compared to western subjects. The ACS cohort showed increased diabetics among south Asians than the westerns. Hence the impact of ethnicity in the incidence of CAD was shown in this meta-analysis.

Ha et al[7], 2010 study evaluated the prevalence of CAD and CT characteristics of CAD in young Korean adults. A total of 112 healthy subjects with a mean age of 35.6 ± 3.7 years were subjected to coronary angiography as part of general health evaluation. The study subjects were grouped as 3 risk categories and were assed for plaque characteristics, number of vessels involved and vascular remodelling. Among the study group, 11% of them were men and had CAD. The subgroups had shown a higher prevalence of CAD, were moderate, high and low showed 22%,25% and 5% respectively. Single vessel disease was in 9 patients, and 3 patients showed two-vessel disease. The proximal left anterior descending coronary artery in almost 60 % of cases was found to have plaque formation. Vascular remodelling was positive in all study subjects with noncalcified or mixed type of plaques. This study showed that the prevalence of CAD among the population was least with no obvious symptoms shown among young adults.

LACUNAE OF LITERATURE

The basis for the fundamental understanding of cardiac health and related studies came through the landmark Framingham study. Since its inception to till date, there have been extensive studies globally exploring the factors contributing to the prevalence and incidence of CVDs. However, in India, the records of CAD are primitive and further calls for more compilation of data record as it houses the maximum population for risk factors for CAD.

MATERIALS & METHODS

Study site: This study was conducted in the department of General Medicine at Jawaharlal Nehru Medical College K.L.E. University, Belgaum

Study population: Patients admitted in the wards and ICU of General Medicine at KLES Dr. Prabhakar Kore Hospital, Belagavi fulfilling the inclusion criteria were considered as the study population.

Study design: The current study was a case control study

Sample size:

The minimum sample size formula based on two proportions is

$$n = \frac{(z_\alpha + z_\beta)^2 \bar{p}(1-\bar{p})}{d^2}$$

Where p_1 and p_2 are the proportions of the two groups.

$$p = \frac{p_1 + p_2}{2} \text{ and } d = p_1 - p_2$$

z_α is linked with the level of significance and z_β is linked with the power of the test. For 5% level of the significance z_α = 1.96 and z_β = 0.84 for 80% power of the test.

By taking a proportion of success in the first attempt, p_1 = 41.4% and p_2 = 52.8%

the sample size obtained is 301.

- Sample size: **602**

Sampling method: All the eligible subjects were recruited into the study consecutively by convenient sampling till the sample size is reached.

Study duration: The data collection for the study was done between January 2018 to December 2019 for a period of 1 year.

Inclusion Criteria:

- Patients above 18 years of age

Exclusion criteria:

- Chronic Kidney Disease
- Chronic Liver Disease
- Pregnancy
- Patients with a history of angioplasty and stent placement
- Patients with a history of Coronary artery bypass grafting. [CABG]

Ethical considerations: Approval for this study was obtained from the institutional human ethics committee. Informed written consent was taken from all the study participants. Only those participants willing to sign the informed consent were included in the study. The risks and benefits involved in the study and the voluntary nature of participation were explained to the participants before obtaining consent. Study participants confidentiality was maintained.

Data collection tools: All the relevant parameters were documented in a structured study proforma.

Methodology:

All patients undergoing elective coronary angiography at KLES Hospital were recruited for the study once they satisfied the inclusion criteria. Based on coronary angiography report, they were classified into cases and controls.

A detailed history and clinical examination were done. Metabolic parameters like Random blood sugar (RBS), Fasting Lipid profile (FLP), Creatinine HbA1c were assessed. BMI and WHR of each patient were recorded.

Lifestyle was classified into sedentary, moderate and active based on history and profession and energy requirement. Subjects were asked about their exercise

activity and were classified into daily, weekly, occasional and no exercise based on history.

Height and weight were measured two times, and the average was taken. BMI of the participants were calculated as weight (in kg) divided by height (in meters^2), and BMI were represented as a standard deviation score.

Waist circumference (WC) measurement was taken at the level of the iliac crest and umbilicus with a calibrated tape. Hip circumference (HC) was measured was taken at the lowest level over the buttocks with a calibrated tape.

Blood pressure (BP) was recorded in a sitting position using a mercury sphygmomanometer.

Results of coronary angiography were noted. Classification of Single vessel disease (SVD), double vessel disease (DVD) and triple vessel disease (TVD) were used to assess the coronary angiography.

Investigations:

- Hemoglobin,
- Serum Creatinine
- Glycosylated hemoglobin (HbA1c)
- Random blood sugar (RBS)
- Lipid profile (Cholesterol, Triglycerides, High-Density lipoprotein [HDL], Low-density lipoprotein [LDL]

Statistical methods:

Coronary Angiography parameters were considered as primary outcome variable variables. Risk factors like lifestyle, exercise, presence of diabetes and

hypertension and clinical parameters like BMI pulse SBP DBP WHR neck circumference and metabolic values like Triglycerides, LDL, HDL, cholesterol, glycosylated hemoglobin and random blood sugar were considered as secondary outcome variables. Study group (Normal Angiographies Vs SVD + DVD + TVD) was considered as a primary explanatory variable.

Descriptive analysis was carried out by mean and standard deviation for quantitative variables, frequency and proportion for categorical variables. Non-normally distributed quantitative variables were summarised by the median and interquartile range (IQR). Data was also represented using appropriate diagrams like a bar diagram, pie diagram and box plots.

Categorical outcomes were compared between study groups using Chi square test /Fisher's Exact test (If the overall sample size was < 20 or if the expected number in any one of the cells is < 5, Fisher's exact test was used.)

P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis. [76]

OBSERVATIONS AND RESULTS

RESULTS:

A total of 602 subjects were involved in the analysis.

Table 2: Analysis of age in the study population (N=602)

Parameter	Mean ± SD	Median	Minimum	Maximum	95% C.I	
					Lower	Upper
Age	58.16 ± 12.41	60.00	19.00	92.00	57.17	59.15

The mean age was 58.16 ± 12.41 in the study population, ranging between 19 years to 92 years (95% CI 57.17 to 59.15). (Table 2)

Table 3: Descriptive analysis of age group in the study population (N=602)

Age Group	Frequency	Percentages
Up to 20 years	2	0.3%
21 to 40 years	53	8.8%
41 to 60 years	297	49.3%
61 to 80 years	234	38.9%
81 years and above	16	2.7%

Among the study population 2(0.3%) were aged up to 20 years, 53(8.8%) were aged between 21 to 40 years, 297(49.3%) were aged 41 to 60 years, 234(38.9%) were aged 61 to 80 years and remaining 16(2.7%) were aged 81 years and above. (Table 3 & figure 2)

Figure 2: Bar chart of the age group in the study population (N=602)

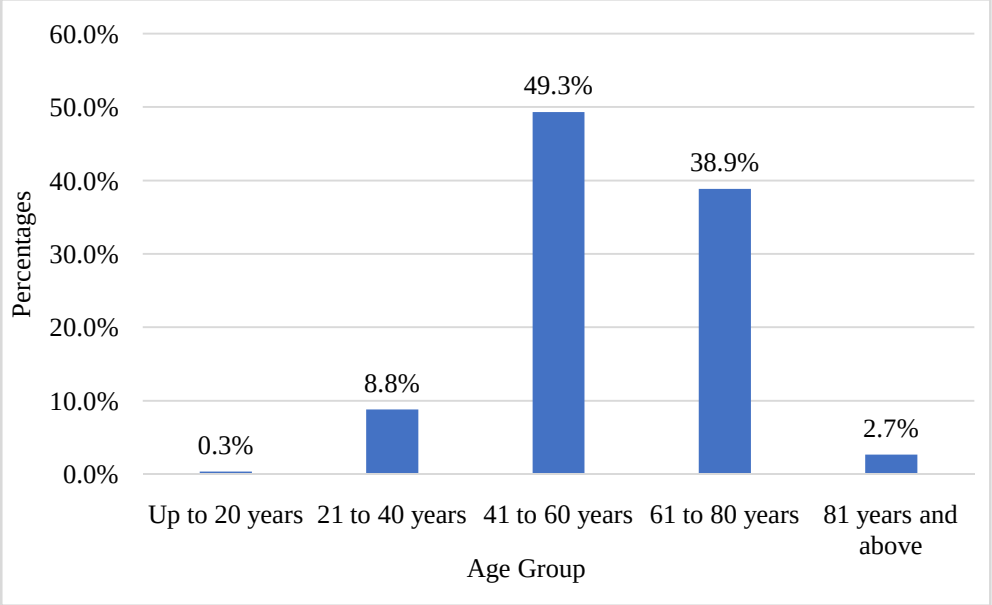

Table 4: Comparison of gender between coronary angiography report (N=602)

Gender	Coronary Angiography (CAG)		Chi square	P-value
	Normal (N=125)	Abnormal (N=477)		
Male	68 (54.4%)	361 (75.7%)	21.904	**<0.001**
Female	57 (45.6%)	116 (24.3%)		

Among the people with normal coronary angiography**,** 68 (54.4%) participants were male, and 57 (45.6%) participants were female. The difference in the proportion of gender between study groups was statistically significant (P value <0.001). (Table 4 & Figure 3)

Figure 3: Cluster bar chart of comparison of gender across coronary angiography report (N=602)

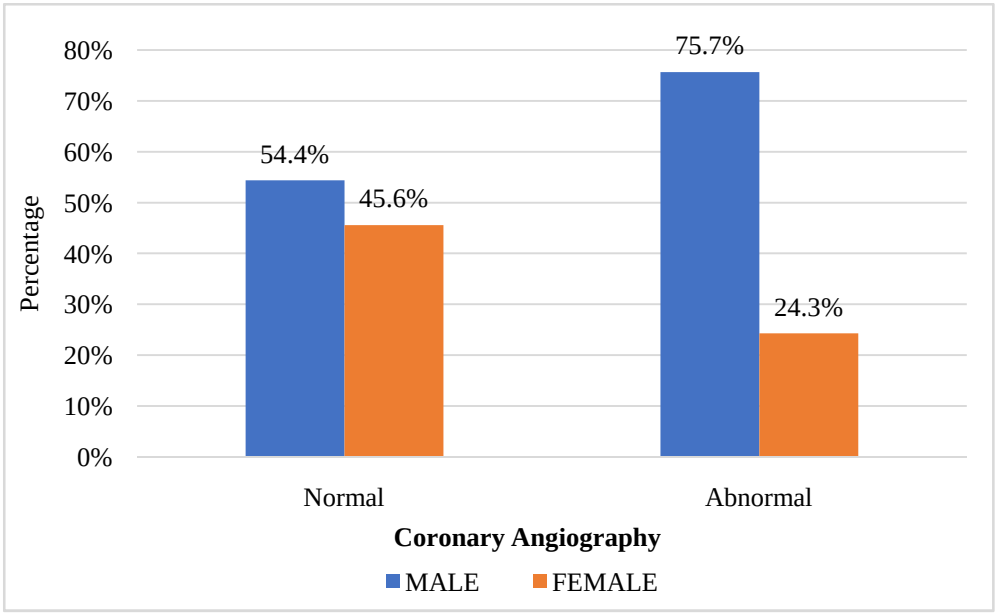

Table 5: Descriptive analysis of parameters in the study population (N=602)

Parameter	Mean ± SD	Median	Minimum	Maximum	95% C.I	
					Lower	Upper
Pulse	84.26 ± 17.69	80.00	28.00	150.00	82.84	85.68
SBP	122.26 ± 23.11	120.00	70.00	210.00	120.41	124.11
DBP	76.39 ± 11.73	74.00	50.00	120.00	75.45	77.33
Height	161.87 ± 7.19	164.00	140.00	178.00	161.30	162.45
Weight	61.1 ± 11.41	60.00	32.00	98.00	60.19	62.01

The mean pulse was 84.26 ± 17.69 in the study population, ranging between 28 to 150 (95% CI 82.84 to 85.68). The mean SBP was 122.26 ± 23.11 in the study population, ranging between 70 to 210 (95% CI 120.41 to 124.11). The mean DBP was 76.39 ± 11.73 in the study population, ranging between 70 to 210 (95% CI 120.41 to 124.11). The mean height was 161.87 ± 7.19 in the study population, ranging between 140 cm to 178 cm (95% CI 161.30 to 162.45). The mean weight was 61.1 ± 11.41 in the study population, ranging between 32 to 98 (95% CI 60.19 to 62.01). (Table 5)

Table 6: Comparison of mean of BP, pulse between the study groups (N=602)

Parameter	Coronary Angiography (Mean± SD)		P value
	Normal (N=125)	Abnormal (N=477)	
Pulse	83.26 ± 17.61	84.52 ± 17.72	0.480
SBP mm/hg	119.86 ± 19.51	122.88 ± 23.95	0.194
DBP mm/hg	76.59 ± 9.6	76.33 ± 12.24	0.827

The mean pulse of subjects in normal coronary angiography was 83.26 ± 17.61, and it was 84.52 ± 17.72 in abnormal coronary angiography. The difference in the pulse between the two groups was statistically not significant (P Value 0.480).

The mean systolic BP of subjects in normal coronary angiography was 119.86 ± 19.51, and it was 122.88 ± 23.95 in abnormal coronary angiography. The difference in the systolic BP between the two groups was statistically not significant (P Value 0.194). The mean diastolic BP of subjects in normal coronary angiography was 76.59 ± 9.6, and it was 76.33 ± 12.24 in abnormal coronary angiography. The difference in the diastolic BP between the two groups was statistically not significant (P Value 0.827).

Table 7: Descriptive analysis of Coronary Angiography (CAG) report in the study population (N=602)

Coronary Angiography (CAG)	Frequency	Percentages
Normal	125	20.76%
Abnormal	477	79.24%

Among the study population, 125 (20.76%) participants had normal coronary angiography report. (Table 7 & Figure 4)

Figure 4: Pie chart of Coronary Angiography (CAG) in the study population (N=602)

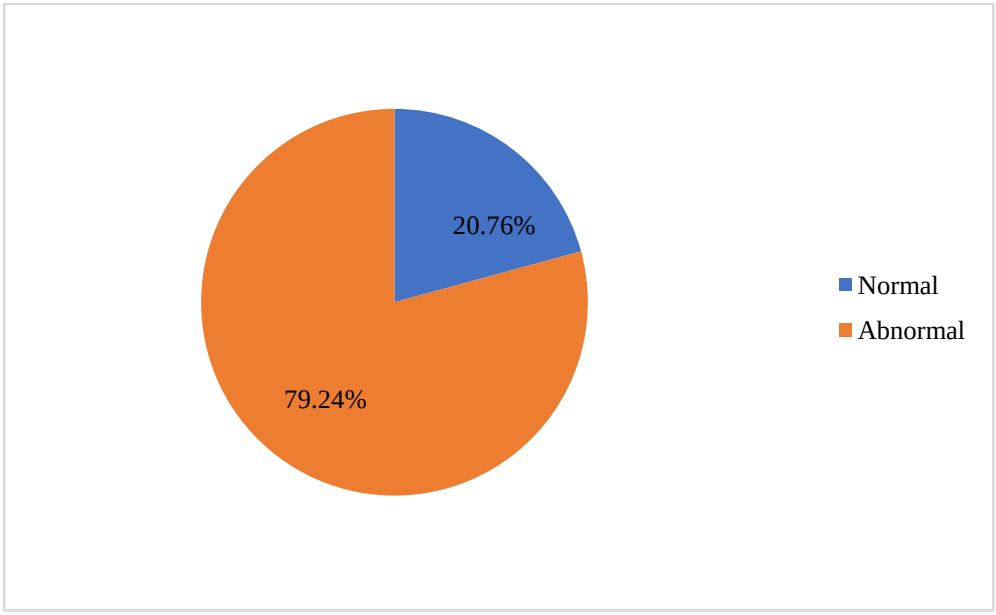

Table 8: Comparison of mean of anthropometric parameters between the study groups (N=602)

Parameter	Coronary Angiography (CAG)		P value
	Normal (N=125)	Abnormal (N=477)	
BMI **(Mean± SD)**	23.52 ± 4.16	23.15 ± 3.69	0.340
Waist circumference **(Mean± SD)**	76.62 ± 7.03	77.54 ± 7.19	0.199
Hip circumference **(Mean± SD)**	93.49 ± 8.54	95.92 ± 7.61	0.002
Waist hip ratio **(Mean± SD)**	0.82 ± 0.06	0.81 ± 0.05	0.022

The mean BMI of subjects in normal coronary angiography was 23.52 ± 4.16, and it was 23.15 ± 3.69 in abnormal coronary angiography. The difference in the BMI between the two groups was statistically not significant (P Value 0.340). The mean waist circumference of subjects in normal coronary angiography was 76.62 ± 7.03, and it was 77.54 ± 7.19 in abnormal coronary angiography. The difference in the waist circumference between the two groups was statistically not significant (P Value 0.199). The mean hip circumference of subjects in normal coronary angiography was 93.49 ± 8.54, and it was 95.92 ± 7.61 in abnormal coronary angiography. The difference in the hip circumference between the two groups was statistically significant (P Value 0.002). The mean waist-hip ratio of subjects in normal coronary angiography was 0.82 ± 0.06, and it was 0.81 ± 0.05 in abnormal coronary angiography. The difference in the waist-hip ratio between the two groups was statistically significant (P Value 0.022). (Table 8)

Table 9: Comparison of age group between coronary angiography report (N=602)

Age Group	Coronary Angiography Report	
	Normal (N=125)	**Abnormal (N=477)**
Up To 20 Years	2 (1.6%)	0 (0%)
21 To 40 Years	20 (16%)	33 (6.92%)
41 To 60 Years	71 (56.8%)	226 (47.38%)
61 To 80 Years	30 (24%)	204 (42.77%)
81 Years and Above	2 (1.6%)	14 (2.94%)

No statistical test was applied- due to 0 subjects in the cells

Among the people with normal coronary angiography report 2 (1.6%) were aged up to 20 years, 20 (16%) were aged 21 to 40 years, 71 (56.8%) were aged 41 to 60 years, 30 (24%) were aged 61 to 80 years, 2 (1.6%) were aged 81 years and above. Among the people with abnormal coronary angiography report 33 (6.92%) were aged 21 to 40 years, 226 (47.38%) were aged 41 to 60 years, 204 (42.77%) were aged 61 to 80 years, 14 (2.94%) were aged 81 years and above. (Table 9)

Table 10: Comparison of gender between coronary angiography report (N=602)

Gender	Coronary Angiography (CAG)		Chi square	P-value
	Normal (N=125)	Abnormal (N=477)		
Male	68 (54.4%)	361 (75.7%)	21.904	**<0.001**
Female	57 (45.6%)	116 (24.3%)		

Among the people with normal coronary angiography**,** 68 (54.4%) participants were male, and 57 (45.6%) participants were female. The difference in the proportion of gender between study groups was statistically significant (P value <0.001). (Table 10 & Figure 5)

Figure 5: Cluster bar chart of comparison of gender across coronary angiography report (N=602)

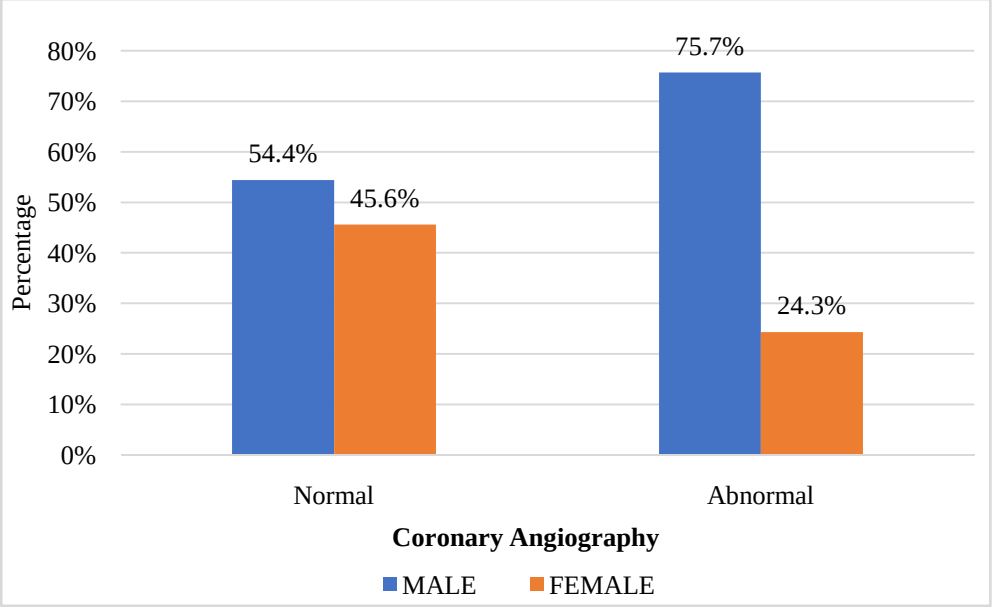

Table 11: Comparison of lifestyle across coronary angiography report (N=602)

Lifestyle	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Active	27 (21.6%)	31 (22.46%)	30 (28.3%)	60 (25.75%)	4.266	0.641
Moderate	36 (28.8%)	46 (33.33%)	25 (23.58%)	71 (30.47%)		
Sedentary	62 (49.6%)	61 (44.2%)	51 (48.11%)	102 (43.78%)		

The difference in lifestyle across coronary angiography report is found to be insignificant with a P-value of 0.641. (Table 11 & Figure 6)

Figure 6: Cluster bar chart of comparison of lifestyle across coronary angiography report (N=602)

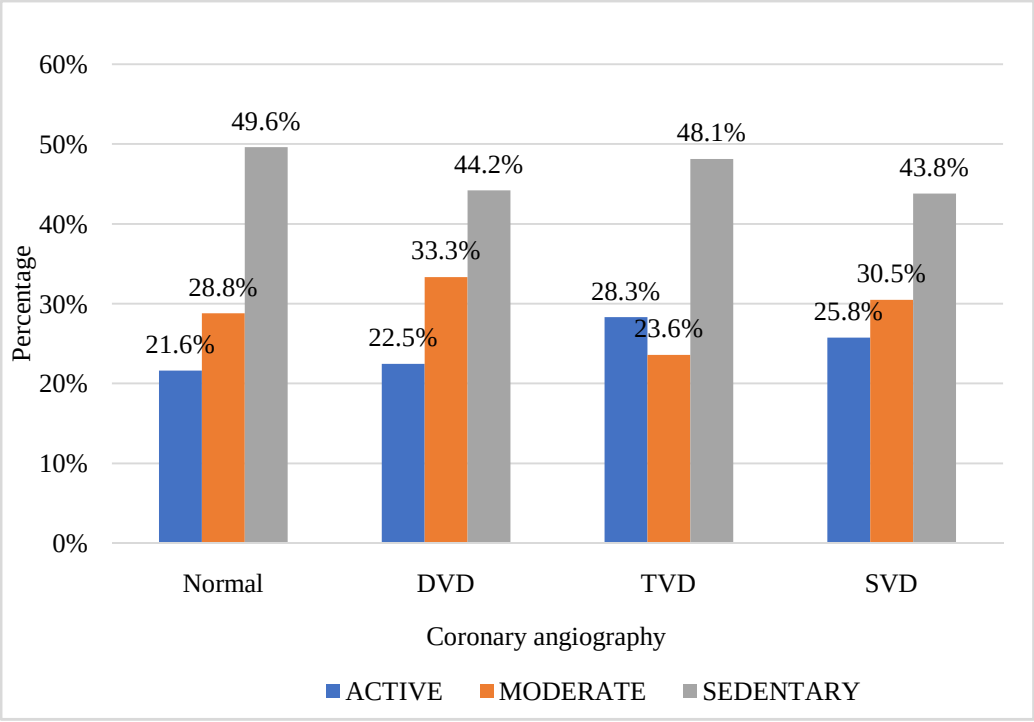

Table 12: Comparison of exercise across the coronary angiography report (N=602)

Exercise	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Daily	13 (10.4%)	19 (13.77%)	12 (11.32%)	38 (16.31%)	10.428	0.317
Weekly	10 (8%)	11 (7.97%)	7 (6.6%)	6 (2.58%)		
Occasional	33 (26.4%)	32 (23.19%)	29 (27.36%)	53 (22.75%)		
No	69 (55.2%)	76 (55.07%)	58 (54.72%)	136 (58.37%)		

The difference in exercise across coronary angiography report is found to be insignificant with a P-value of 0.317. (Table 12 & Figure 7)

Figure 7: Cluster bar chart of comparison of exercise across the coronary angiography **report (N=602)**

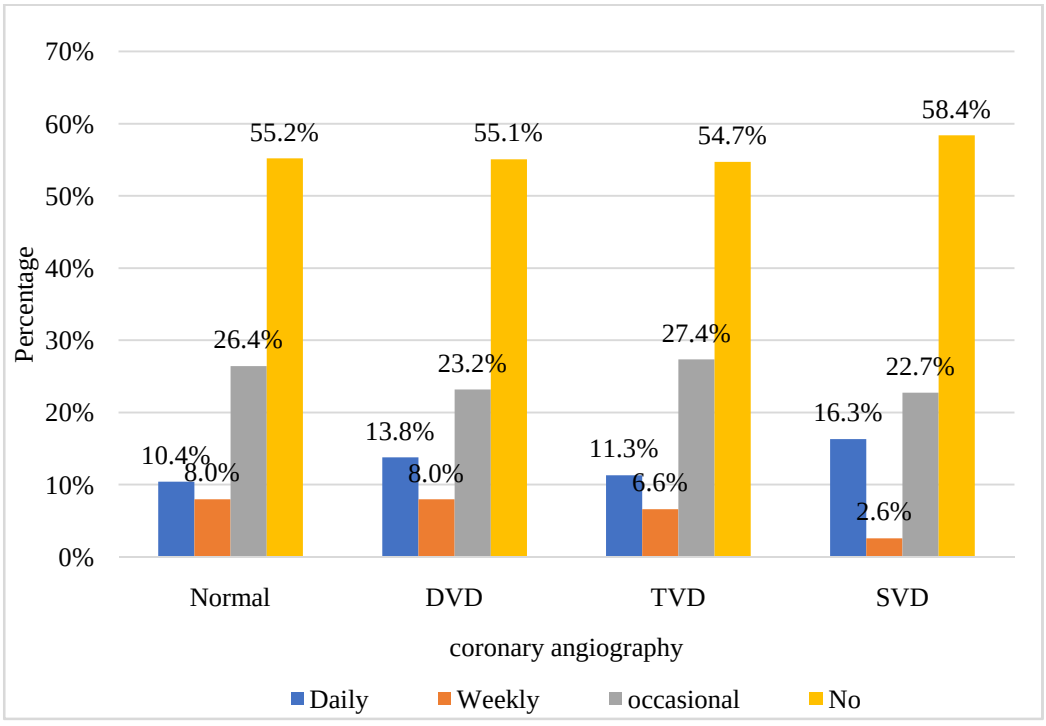

Table 13: Comparison of diet across coronary angiography report (N=602)

Diet	Coronary Angiography (CAG)				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Veg	51 (40.8%)	46 (33.33%)	36 (33.96%)	92 (39.48%)	2.560	0.465
Non-veg	74 (59.2%)	92 (66.67%)	70 (66.04%)	141 (60.52%)		

The difference in veg across coronary angiography report is found to be insignificant with a P-value of 0.465, with the majority of 40.8% participants with normal coronary angiography. (Table 13 & Figure 8)

Figure 8: Cluster bar chart of comparison of diet across coronary angiography report (N=602)

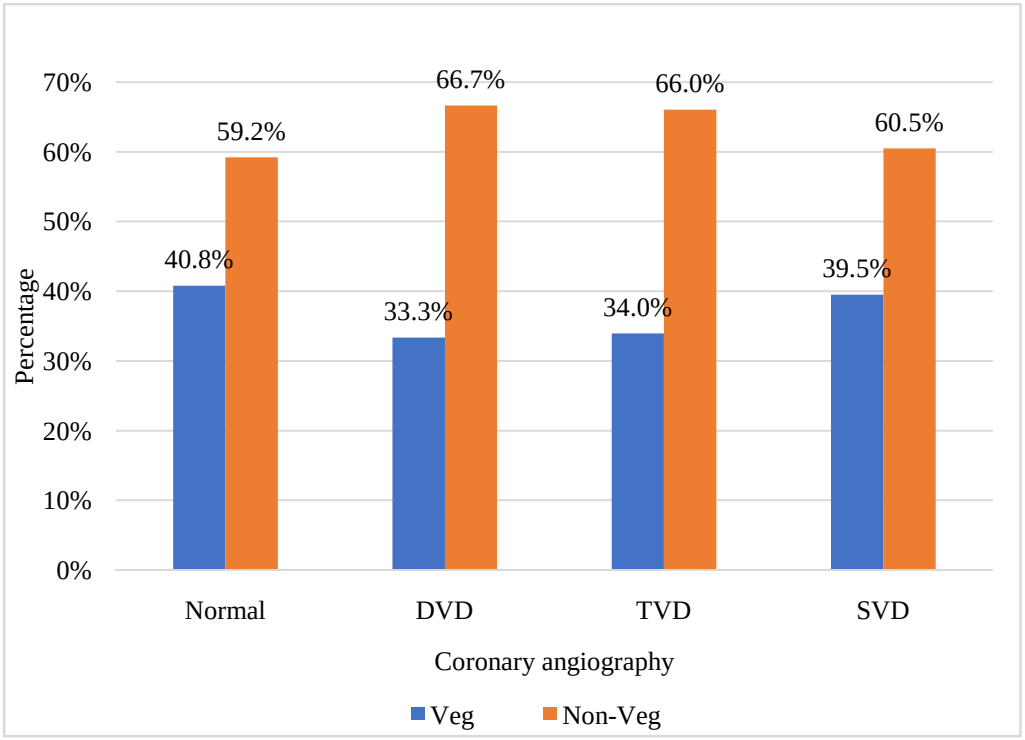

Table 14: Comparison of smoking across the coronary angiography report (N=602)

Smoking	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Yes	18 (14.4%)	27 (19.57%)	21 (19.81%)	48 (20.6%)	2.185	0.535
No	107 (85.6%)	111 (80.43%)	85 (80.19%)	185 (79.4%)		

The difference in smoking across the coronary angiography report is found to be insignificant with a P-value of 0.535, with the majority of 40.8% participants with normal coronary angiography. (Table 14 & Figure 9)

Figure 9: Cluster bar chart of comparison of Smoking across coronary angiography report (N=602)

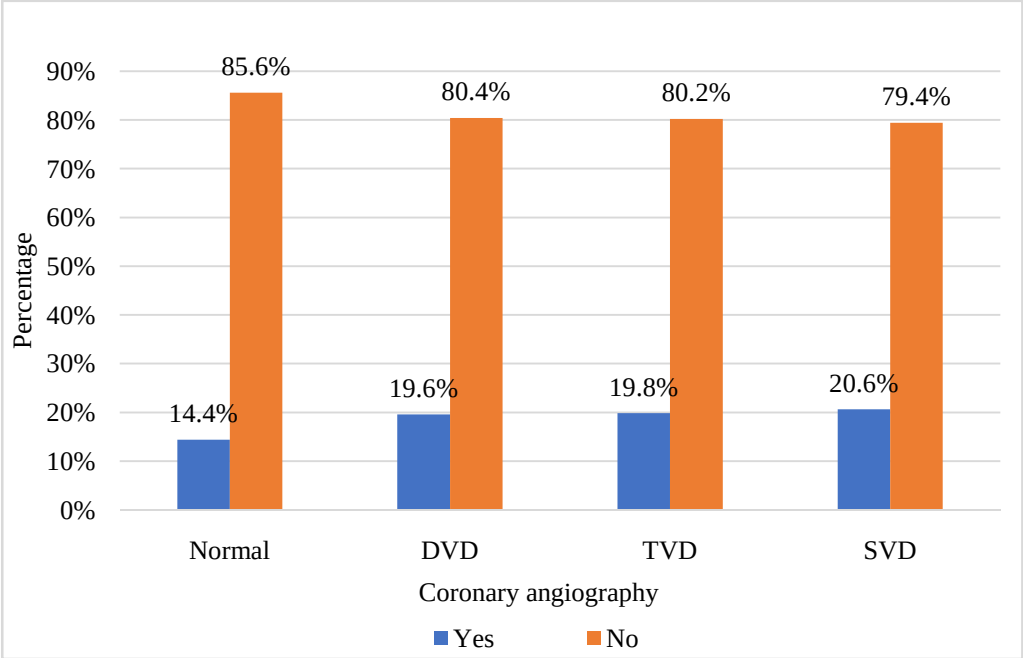

Table 15: Comparison of alcohol across the coronary angiography report (N=602)

Alcohol	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Yes	13 (10.4%)	15 (10.87%)	11 (10.38%)	20 (8.58%)	0.659	0.883
No	112 (89.6%)	123 (89.13%)	95 (89.62%)	213 (91.42%)		

The difference in alcohol across coronary angiography report is found to be insignificant with a P-value of 0.883, with the majority of 10.38% participants with DVD coronary angiography. (Table 15 & Figure 10)

Figure 10: Cluster bar chart of comparison of alcohol across the coronary angiography report (N=602)

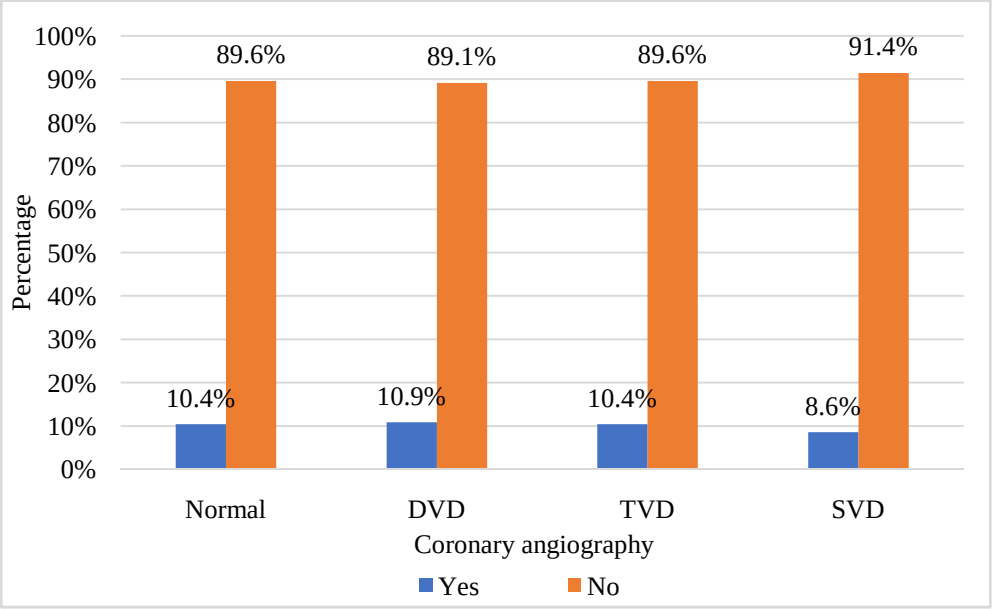

Table 16: Comparison of tobacco across the coronary angiography report (N=602)

Tobacco	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Yes	30 (24%)	47 (34.06%)	36 (33.96%)	54 (23.18%)	8.089	0.044
No	95 (76%)	91 (65.94%)	70 (66.04%)	179 (76.82%)		

The difference in tobacco across coronary angiography report is found to be significant with a P-value of 0.044, with the majority of 33.96% participants with TVD coronary angiography. (Table 16 & Figure 11)

Figure 11: Cluster bar chart of comparison of tobacco across the coronary angiography report (N=602)

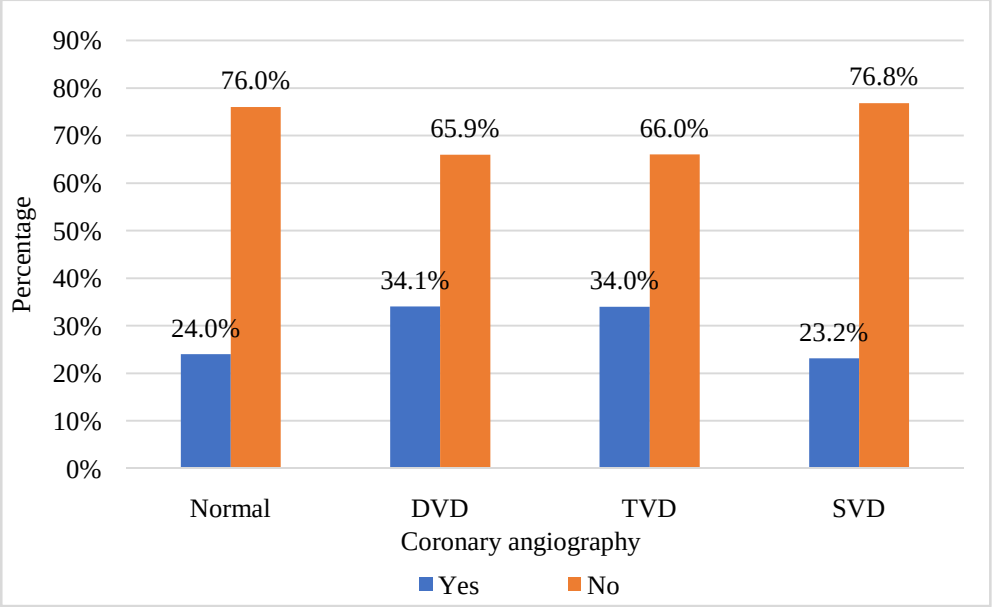

Table 17: Comparison of hypertension across coronary angiography report (N=602)

Hypertension	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Yes	39 (31.2%)	71 (51.45%)	48 (45.28%)	81(34.76%)	15.482	0.001
No	86 (68.8%)	67 (48.55%)	58 (54.72%)	152 (65.24%)		

The difference in hypertension across coronary angiography report is found to be significant with a P-value of 0.001, with the majority of 51.45% participants with DVD coronary angiography. (Table 17 & Figure 12)

Figure 12: Stacked bar chart of comparison of hypertension across coronary angiography report (N=602)

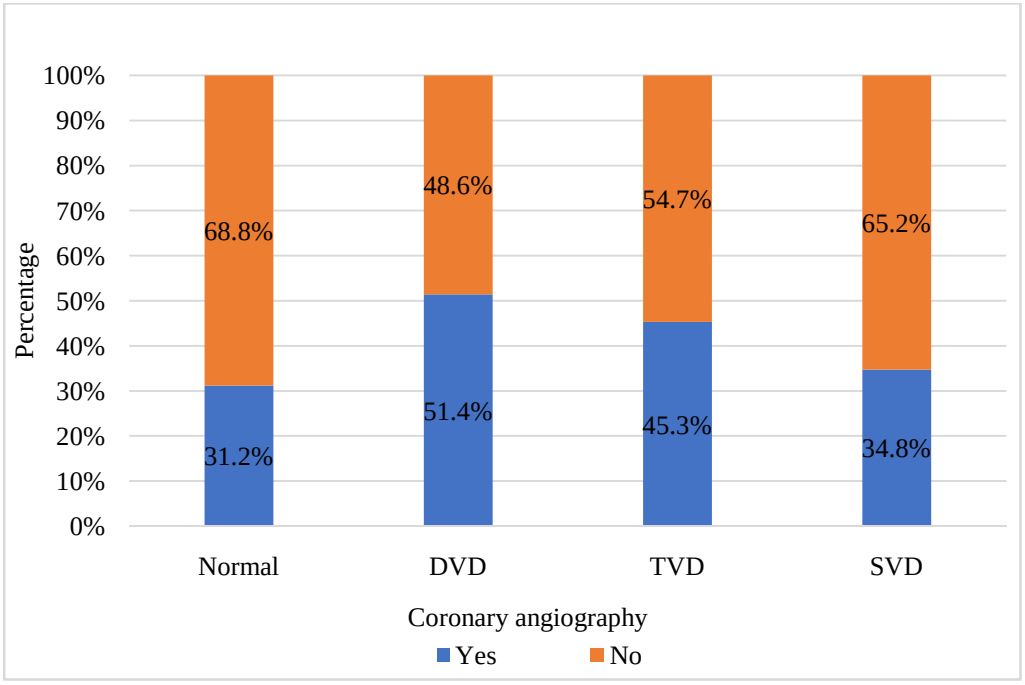

Table 18: Comparison of diabetes across coronary angiography report (N=602)

Diabetes	Coronary angiography Report				Chi square	P value
	Normal (N=125)	DVD (N=138)	TVD (N=106)	SVD (N=233)		
Diabetic	28 (22.4%)	46 (33.33%)	45 (42.45%)	82 (35.19%)	22.567	<0.001
Newly Detected	8 (6.4%)	3 (2.17%)	12 (11.32%)	12 (5.15%)		
Non-Diabetic	89 (71.2%)	89 (64.49%)	49 (46.23%)	139 (59.66%)		

The difference in diabetes across coronary angiography report is found to be significant with a P-value of <0.001. (Table 18 & Figure 13)

Figure 13: Cluster bar chart of comparison of diabetes across coronary angiography report (N=602)

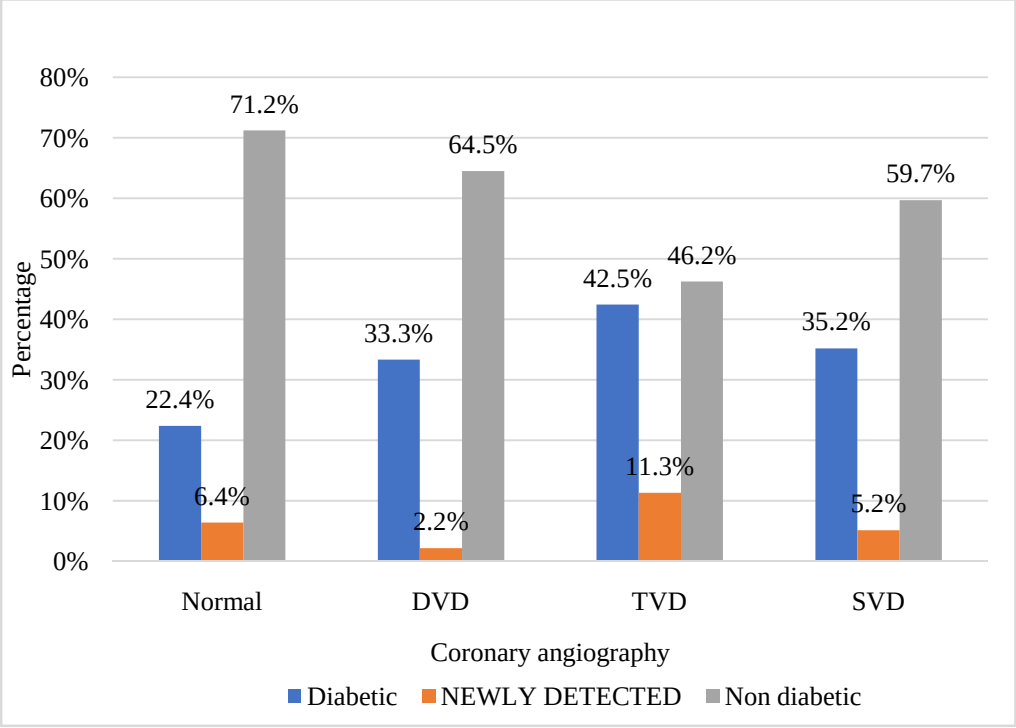

Table 19: Descriptive analysis of other comorbidities in the study population (N=30)

Other comorbidities	Frequency	Percentages
COPD (Chronic Obstructive Pulmonary Disease)	15	50.0%
HBsAg (hepatitis B positive)	4	13.3%
Stroke	3	10.0%
Deep vein thrombosis (DVT)	1	3.3%
Epilepsy	1	3.3%
Familial hypercholesteremia	1	3.3%
Hyperhomocystinemia	1	3.3%
Oral cavity malignancy	1	3.3%
Parkinsonism	1	3.3%
PVD (Peripheral Vascular disease)	1	3.3%
RVD (Retroviral disease)	1	3.3%

Majority of the patients (15) were also diagnosed with COPD (Chronic Obstructive Pulmonary Disease) and 4 with HBsAg (hepatitis B positive) and 3 with Stroke and other comorbidities distributed as small proportions. (Table 19)

Table 20: Comparison of metabolic parameters between the study groups (N=602)

Parameter	Coronary Angiography (CAG)		
	Normal (N=125) Median (IQR)	**Abnormal (N=477) Median (IQR)**	**Mann Whitney U test (P value)**
RBS	102 (84.5,149)	127 (99,199.5)	<0.001
Creatinine	0.81 (0.66,1.03)	0.94 (0.78,1.16)	<0.001
HbA1c	6 (5.7,6.7)	6.1 (5.9,8.3)	<0.001

Among the people with normal coronary angiography, the median RBS was 102 (IQR 84.5 to 149), and it was 127 (IQR 99 to 199.5) in people with abnormal coronary angiography. The difference in the RBS between two groups was statistically significant (P Value <0.001). Among the people with normal coronary angiography, the median creatinine was 0.81 (IQR 0.66 to 1.03), and it was 0.94 (IQR 0.78 to 1.16) in people with abnormal coronary angiography. The difference in the creatinine between two groups was statistically significant (P Value <0.001). Among the people with normal coronary angiography, the median HbA1c was 6 (IQR 5.7 to 6.7), and it was 6.1 (IQR 5.9 to 8.3) in people with abnormal coronary angiography. The difference in the HbA1c between the two groups was statistically significant (P Value <0.001). (Table 20)

Table 21: Descriptive analysis of HB category in the study population (N=602)

HB category(g/dl)	Frequency	Percentages
<9	21	3.5%
9.01 to 10	22	3.7%
10.01 to 11	54	9.0%
11.01 to 12	94	15.6%
12.01 to 13	112	18.6%
13.01 to 14	109	18.1%
14.01 to 15	81	13.5%
More than 15	109	18.1%

Majority of study population 112(18.6%) had hemoglobin 12.01 to 13 g/dl, 109(18.1%) had 13.01 to 14 g/dl and 109(18.1%) had more than 15 g/dl. (Table 21 & figure 14)

Figure 14: Bar chart of HB category in the study population (N=602)

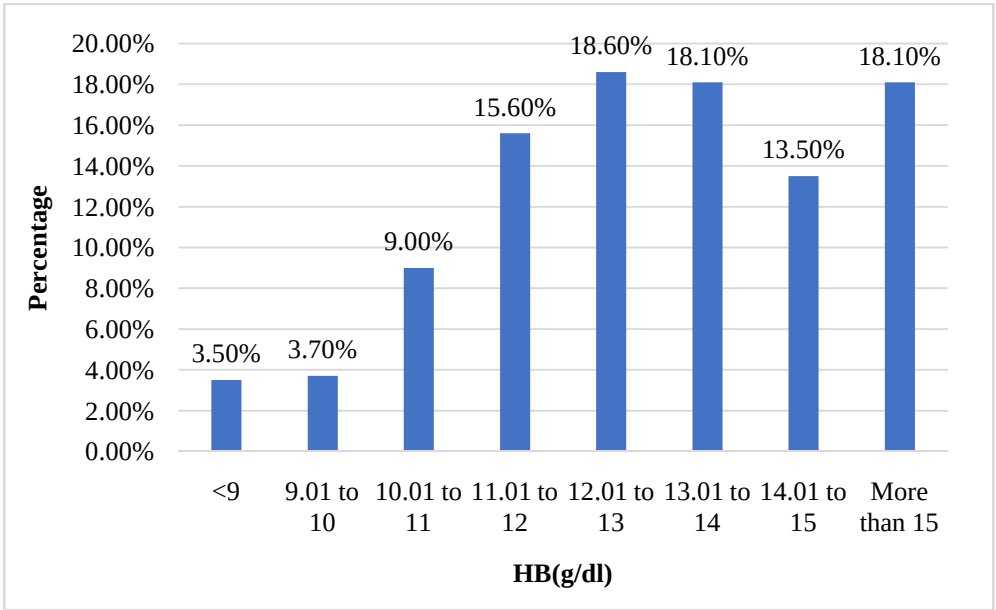

Table 22: Comparison of Hemoglobin between the coronary angiography reports (N=602)

HB category	Coronary Angiography Report		Chi square	P value
	Normal (N=125)	Abnormal (N=477)		
<9	5 (4%)	16 (3.35%)	24.956	<0.001
9.01 To 10	5 (4%)	17 (3.56%)		
10.01 To 11	13 (10.4%)	41 (8.6%)		
11.01 To 12	19 (15.2%)	75 (15.72%)		
12.01 To 13	35 (28%)	77 (16.14%)		
13.01 To 14	10 (8%)	99 (20.75%)		
14.01 To 15	24 (19.2%)	57 (11.95%)		
More Than 15	14 (11.2%)	95 (19.92%)		

The difference in hemoglobin between coronary angiography report is found to significant with a P-value of <0.001. (Table 22 & Figure 15)

Figure 15: Cluster bar chart of comparison of Hemoglobin between the coronary angiography reports (N=602)

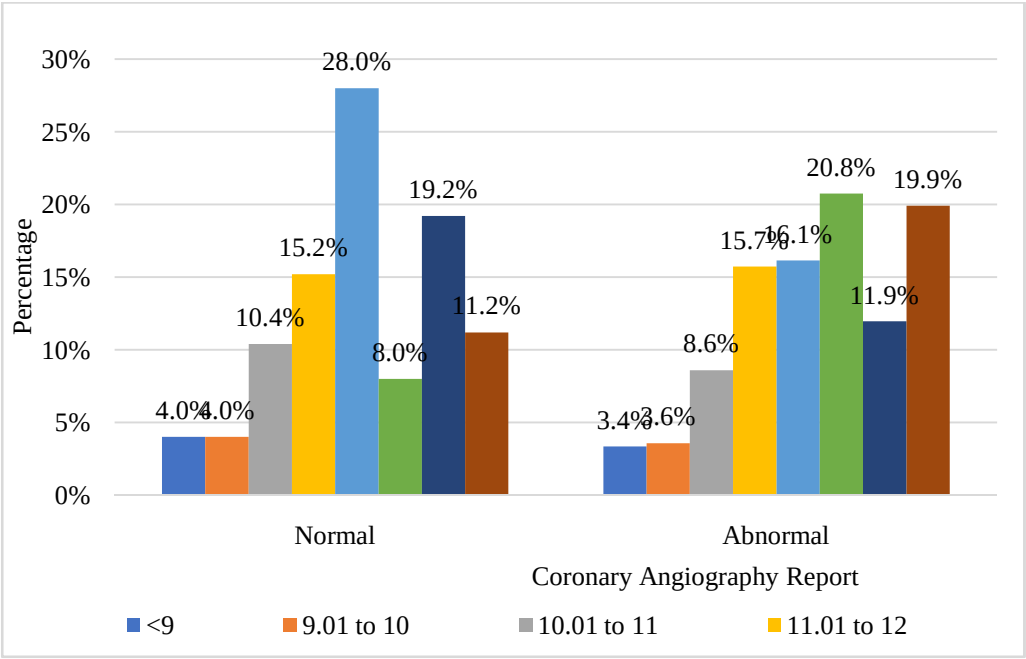

Table 23: Descriptive analysis of RBS in the study population (N=602)

RBS category(mg/dl)	Frequency	Percentages
Up to 100	195	32.4%
101 to 200	273	45.3%
201 to 300	71	11.8%
301 to 400	43	7.1%
401 to 500	15	2.5%
501 and above	5	0.8%

Among the study population 195(32.4%) had random blood sugar up to 100 mg/dl, 273(45.3%) had between 101 to 200 mg/dl, 71(11.8%) had between 201 to 300 mg/dl, 43(7.1%) had 310 to 400 mg/dl, 15(2.5%) had 410 to 500 mg/dl and remaining 5(0.8%) had RBS 501 mg/dl and above. (Table 23 & figure 16)

Figure 16: Pie chart of RBS in the study population (N=602)

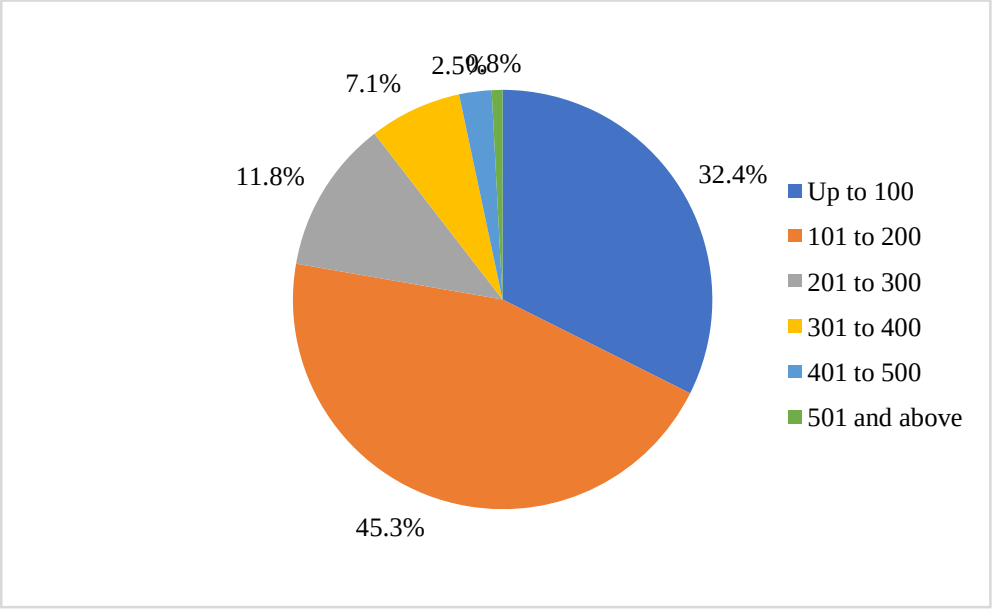

Table 24: Descriptive analysis of HbA1c in the study population (N=602)

HbA1c Category (%)	Frequency	Percentages
Up to 5	21	3.5%
5.1 to 7	399	66.3%
7.1 to 9	76	12.6%
9.1 to 11	60	10.0%
11.1 to 13	40	6.6%
More than 13	6	1.0%

Majority of study population 399(66.3%) had HbA1c 5.1 to 7%, 76(12.6%) had 7.1 to 9 % and 60(10%) had 9.1 to 11%. (Table 24 & figure 17)

Figure 17: Pie chart of HbA1c in the study population (N=602)

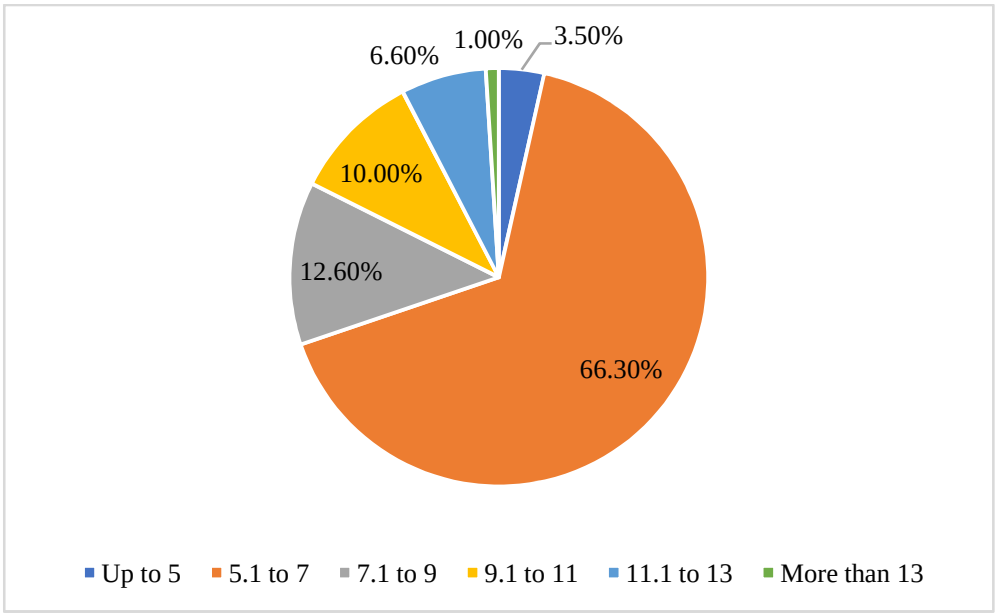

Table 25: Comparison of HbA1c between the coronary angiography reports (N=602)

HbA1c Category	Coronary Angiography Report		Chi square	P value
	Normal (N=125)	Abnormal (N=477)		
Up To 5	8 (3.2%)	13 (1.36%)	28.233	<0.001
5.1 To 7	98 (39.2%)	301 (31.55%)		
7.1 To 9	9 (3.6%)	67 (7.02%)		
9.1 To 11	1 (0.4%)	59 (6.18%)		
11.1 To 13	6 (2.4%)	34 (3.56%)		
More Than 13	3 (1.2%)	3 (0.31%)		

The difference in HbA1c between coronary angiography report is found to significant with a P-value of <0.001. (Table 25 & Figure 18)

Figure 18: Cluster bar chart of comparison of HbA1c between the coronary angiography reports (N=602)

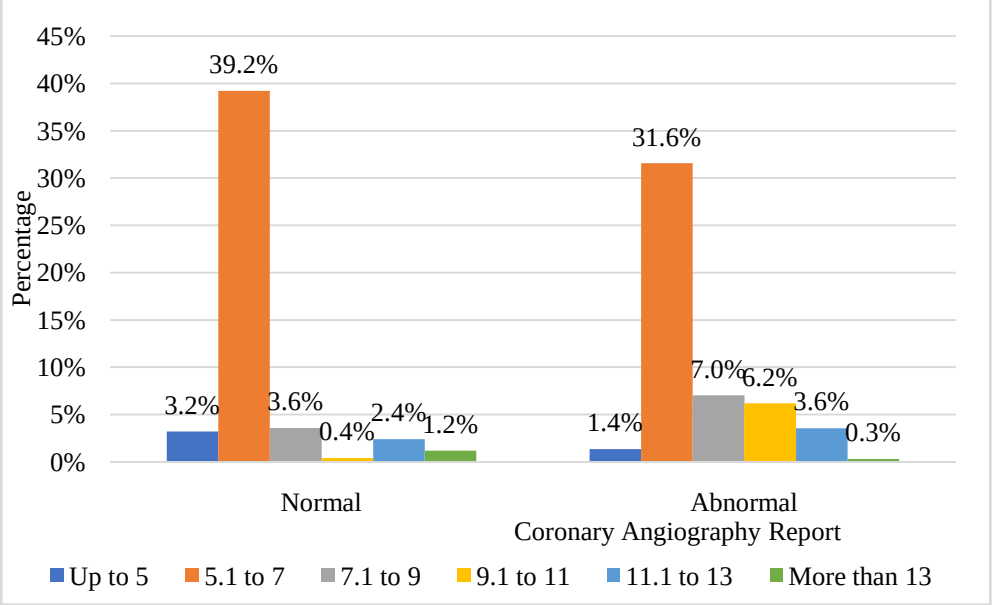

Table 26: Descriptive analysis of creatinine in the study population (N=602)

Creatinine category(mg/dl)	Frequency	Percentages
Up to 0.50	17	2.8%
0.50 to 1.0	365	60.6%
1.01 to 1.50	184	30.6%
1.51 to 2.0	28	4.7%
More than 2	8	1.3%

Among the study population 17(2.8%) had creatinine up to 0.50 mg/dl, 365(60.6%) had creatinine between 0.50 to 1.0 mg/dl, 184(30.6%) had creatinine 1.01 to 1.50 mg/dl, 28(4.7%) had creatinine 1.51 to 2 mg/dl and remaining 8(1.3%) had more than 2 mg/dl. (Table 26 & figure 19)

Figure 19: Pie chart of creatinine in the study population (N=602)

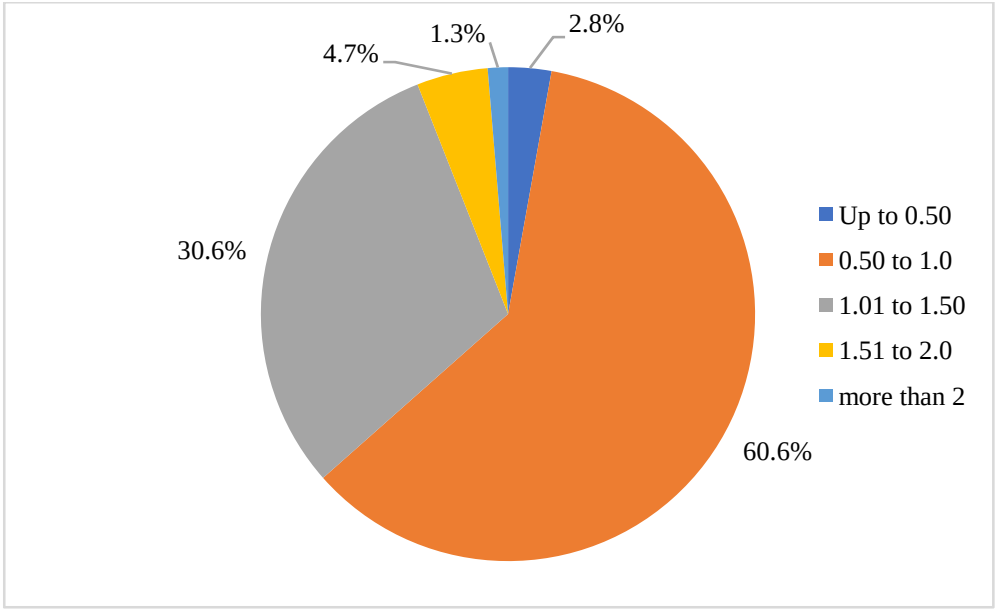

Table 27: Descriptive analysis of LDL in the study population (N=602)

LDL Category(mg/dl)	Frequency	Percentages
Up to 50	50	8.3%
51 to 100	225	37.4%
101 to 150	217	36.0%
151 to 200	92	15.3%
More than 200	18	3.0%

Among the study population 50(8.3%) had LDL up to 50 mg/dl, 225(37.4%) had between 51 to 100 mg/dl, 217(36%) had between 101 to 150 mg/dl, 92(15.3%) had between 151 to 200 mg/dl and remaining 18(3%) had more than 200 mg/dl. (Table 27 & figure 20)

Figure 20: Bar chart of LDL in the study population (N=602)

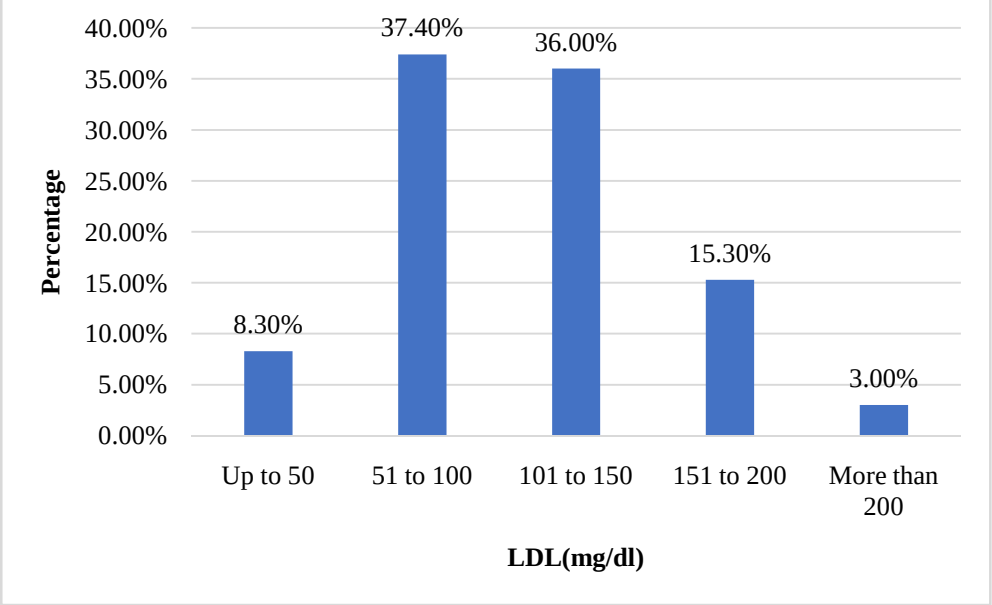

Table 28: Comparison of LDL across coronary angiography report (N=602)

	Coronary angiography Report			
	Normal (N=125)	**SVD (N=233)**	**DVD (N=138)**	**TVD (N=106)**
LDL	109.22± 52.22	108.96±42.58	112.75±46.29	101.02±43.95

Among the people with normal coronary angiography, the mean LDL level was 109.22± 52.22 and in SVD 108.96±42.58, DVD 112.75±46.29, TVD 101.02±43.95. The difference in the LDL between two groups was not statistically significant (P Value 0.752). (Table 28 & Figure 21)

Figure 21: Bar chart of LDL across coronary angiography report (N=602)

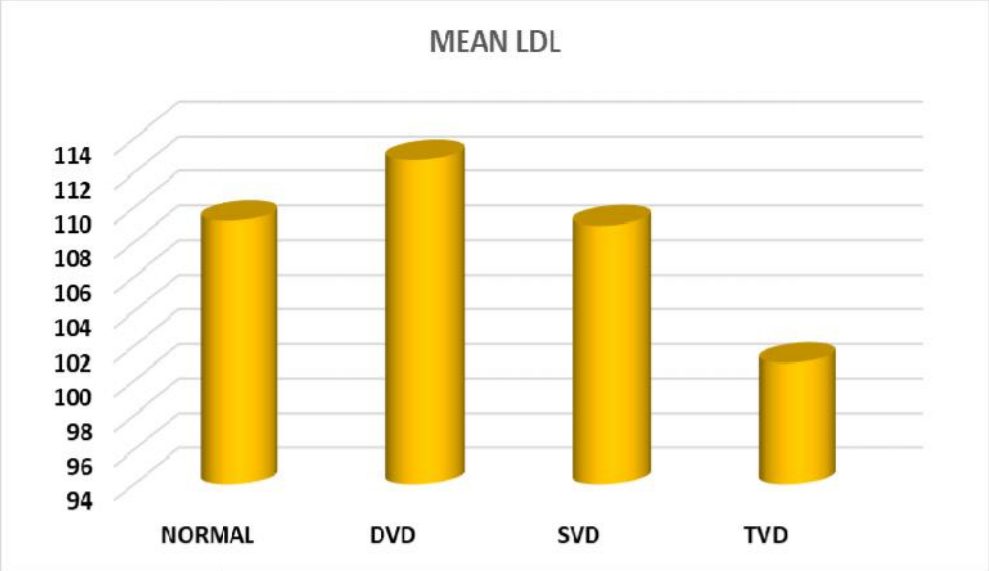

Table 29: Comparison of LDL between the coronary angiography reports (N=602)

LDL Category	Coronary Angiography Report		Chi square	P value
	Normal (N=125)	Abnormal (N=477)		
Up To 50	13 (10.4%)	37 (7.76%)	3.038	0.552
51 To 100	46 (36.8%)	179 (37.53%)		
101 To 150	41 (32.8%)	176 (36.9%)		
151 To 200	19 (15.2%)	73 (15.3%)		
More Than 200	6 (4.8%)	12 (2.52%)		

The difference in LDL between coronary angiography report is found to be insignificant with a P-value of 0.552. (Table 29 & Figure 22)

Figure 22: Cluster bar chart of comparison of LDL between the coronary angiography reports (N=602)

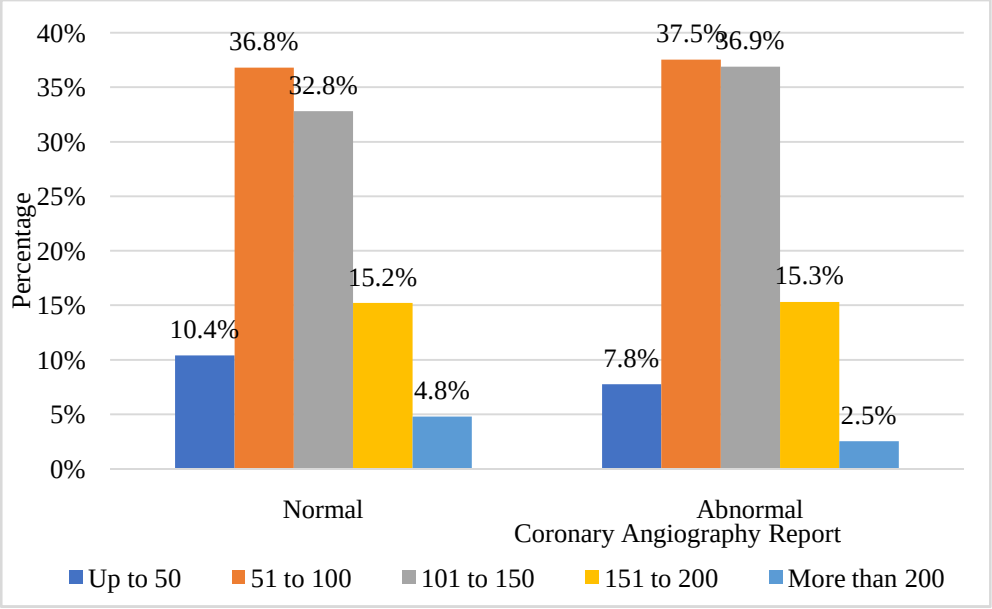

Table 30: Descriptive analysis of HDL in the study population (N=602)

HDL Category(mg/dl)	Frequency	Percentages
<50	495	82.2%
50 and above	107	17.8%

Among the study population, 495(82.2%) had HDL less than 50 mg/dl, and the remaining 107(17.8%) had 50 mg/dl and above. (Table 30 & figure 23)

Figure 23: Bar chart of HDL in the study population (N=602)

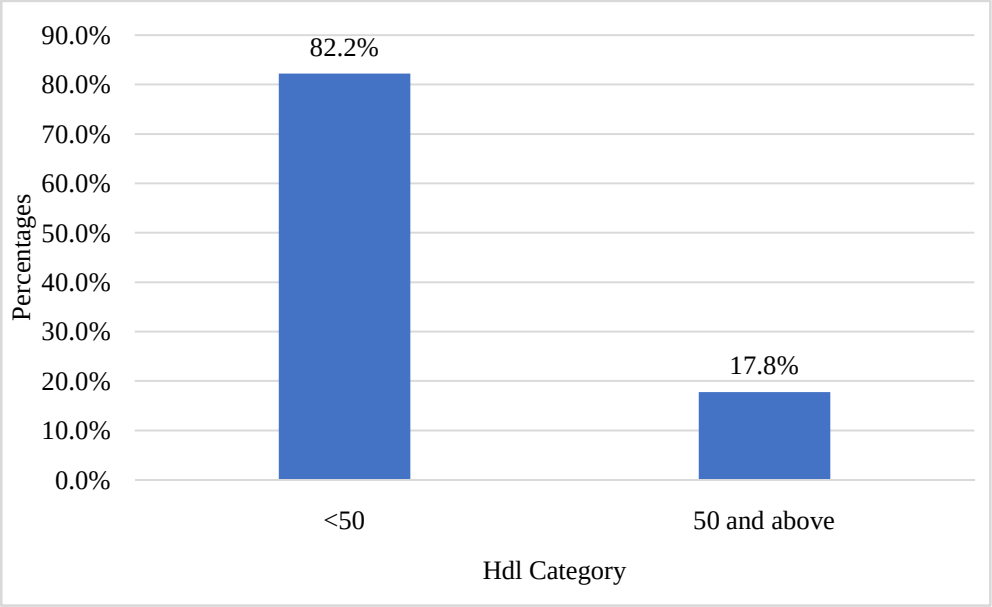

Table 31: Comparison of HDL across coronary angiography report (N=602)

	Coronary angiography Report			
	Normal (N=125)	**SVD (N=233)**	**DVD (N=138)**	**TVD (N=106)**
HDL	38.98± 10.14	40.43±11.34	40.30±10.06	37.08±10.04

Among the people with normal coronary angiography, the mean HDL level was 38.98± 10.14 and in SVD 40.43±11.34, DVD 40.30±10.06, TVD 37.08±10.04. The difference in the HDL between two groups was not statistically significant (P Value 0.535). (Table 31 & Figure 24)

Figure 24: Bar chart of HDL across coronary angiography report (N=602)

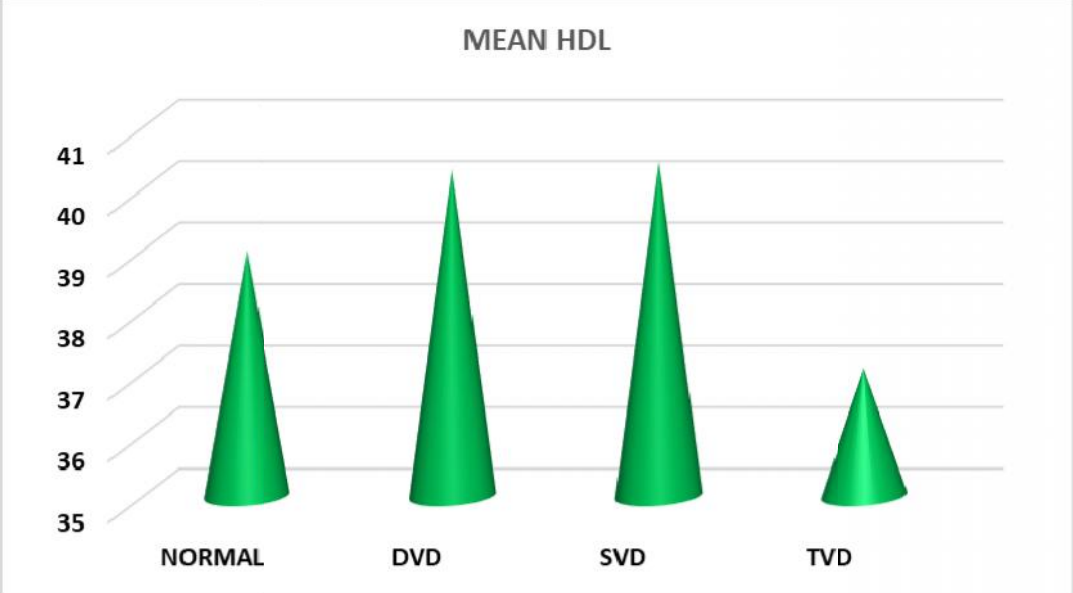

Table 32: Comparison of HDL between the coronary angiography reports (N=602)

HDL Category	Coronary Angiography Report		Chi square	P value
	Normal (N=125)	Abnormal (N=477)		
<50	102 (81.6%)	393 (82.39%)	0.042	0.837
50 And Above	23 (18.4%)	84 (17.61%)		

The difference in HDL between coronary angiography report is found to insignificant with a P-value of 0.837. (Table 32 & Figure 25)

Figure 25: Cluster bar chart of comparison of HDL category between coronary angiography report (N=602)

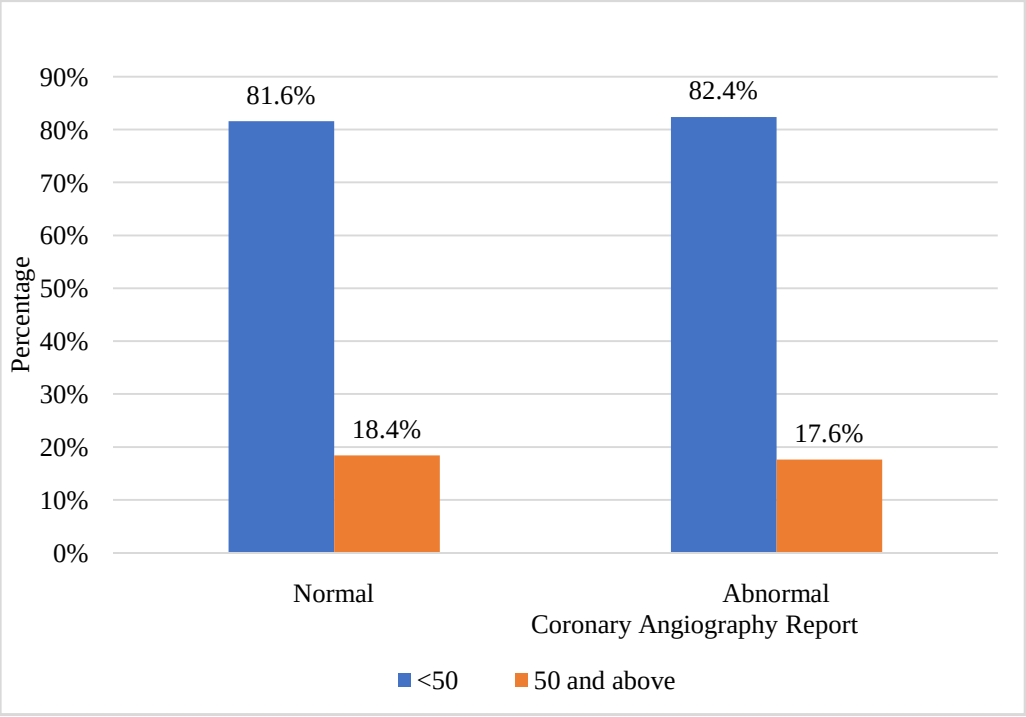

Table 33: Comparison of cholesterol across the coronary angiography report (N=602)

	Coronary angiography Report			
	Normal (N=125)	**SVD (N=233)**	**DVD (N=138)**	**TVD (N=106)**
Cholesterol	164.7 ± 53.9	168.02±47.74	175.51±52.78	158.29±53.58

Among the people with normal coronary angiography, the mean cholesterol level was 164.7 ± 53.9 and in SVD 1168.02±47.74, DVD 175.51±52.78, TVD 158.29±53.58. The difference in the cholesterol between the two groups was not statistically significant (P Value 0.521). (Table 33 & Figure 26)

Figure 26: Bar chart of LDL across coronary angiography report (N=602)

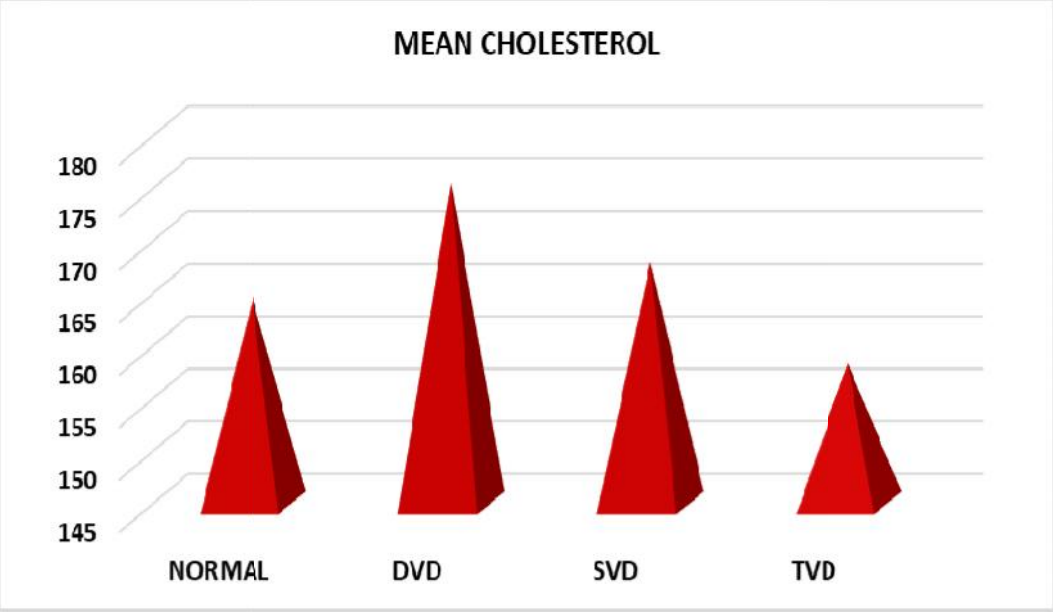

Table 34: Comparison of Triglycerides across coronary angiography report (N=602)

	Coronary angiography Report			
	Normal (N=125)	**SVD (N=233)**	**DVD (N=138)**	**TVD (N=106)**
Triglycerides	141.30± 59.84	135.36±78.23	141.03±70.17	138.25±64.68

Among the people with normal coronary angiography, the mean Triglyceride level was 141.30± 59.84 and in SVD 135.36±78.23, DVD 141.03±70.17, TVD 138.25±64.68. The difference in the triglycerides between the two groups was not statistically significant (P Value 0.193). (Table 34 & Figure 27)

Figure 27: Bar chart of LDL across coronary angiography report (N=602)

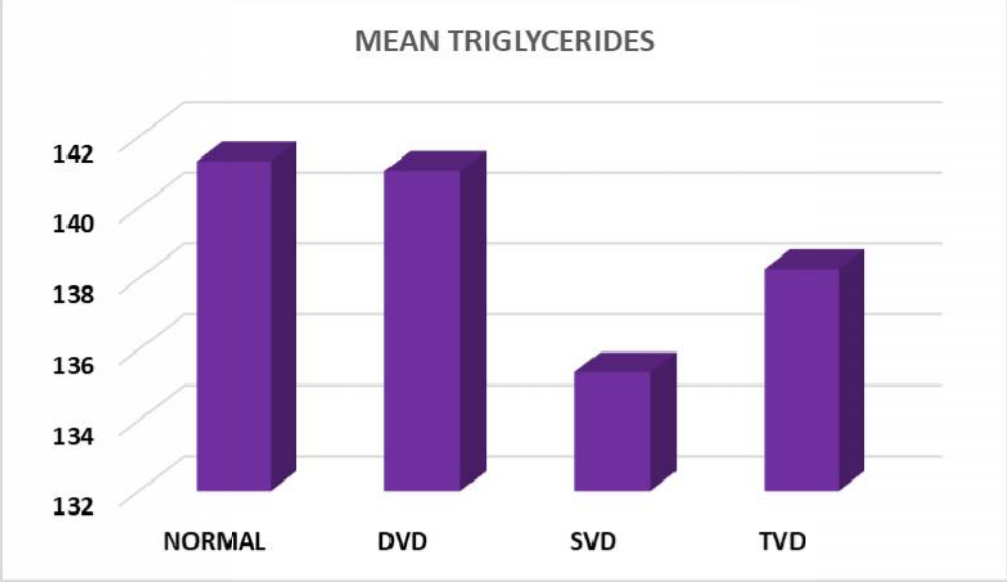

Table 35: Comparison of mean of parameters of lipid profile between the coronary angiography reports (N=602)

Parameter	Coronary Angiography (CAG)		P value
	Normal (N=125)	Abnormal (N=477)	
Cholesterol **(Mean± SD)**	164.7 ± 53.9	168.03 ± 50.83	0.521
Triglycerides **(Mean± SD)**	141.30± 59.84	141.2± 52.96	0.193
LDL **(Mean± SD)**	109.22± 52.22	110.6 ± 56.41	0.752
HDL **(Mean± SD)**	38.98 ± 10.14	39.65 ± 10.77	0.535

The mean cholesterol of subjects in normal coronary angiography was 164.7 ± 53.9, and it was 168.03 ± 50.83 in abnormal coronary angiography. The difference in the cholesterol between the two groups was statistically not significant (P Value 0.521). The mean triglycerides of subjects in normal coronary angiography was 141.30± 59.84and it was 141.2± 52.96 in abnormal coronary angiography. The difference in the triglycerides between the two groups was statistically not significant (P Value 0.193). The mean LDL of subjects in normal coronary angiography was 109.22± 52.22, and it was 110.6 ± 56.41 in abnormal coronary angiography. The difference in the LDL between the two groups was statistically not significant (P Value 0.752). The mean HDL of subjects in normal coronary angiography was 38.98 ± 10.14, and it was 39.65 ± 10.77 in abnormal coronary angiography. The difference in the HDL between the two groups was statistically not significant (P Value 0.535). (Table 35)

Table 36: Univariate binary logistic regression analysis of factors associated with Coronary angiography Report (N=602)

Parameter	Un adjusted odds ratio	95% C.I for unadjusted odds ratio		P value
		Lower	Upper	
Age	0.957	0.942	0.973	<0.001
Gender (Baseline=Female)	0.383	0.255	0.577	<0.001
Veg (Baseline=No)	1.200	0.802	1.795	0.374
Mixed (Baseline=No)	0.848	0.567	1.269	0.423
Smoking (Baseline=No)	0.668	0.386	1.154	0.148
Alcohol (Baseline=No)	1.088	0.568	2.083	0.800
Tobacco (Baseline=No)	0.784	0.497	1.236	0.295
Life style (Baseline=Active)				
Moderate	1.136	0.652	1.979	0.652
Sedentary	1.298	0.784	2.149	0.310
Exercise (baseline=No)				
Daily	0.737	0.385	1.411	0.357
Weekly	1.630	0.745	3.570	0.211
Occasional	1.133	0.709	1.811	0.603
Diabetic (Baseline=Non diabetic))				
Diabetic	0.504	0.316	0.802	0.004
Newly detected	0.922	0.404	2.103	0.922
Pulse	0.966	0.985	1.007	0.480
SBP	0.944	0.985	1.003	0.194
DBP	1.002	0.985	1.091	0.826
Waist circumference	0.982	0.954	1.010	0.199
Hemoglobin	0.938	0.855	1.030	0.938
Creatinine	0.520	0.278	0.974	0.041
Cholesterol	0.999	0.995	1.003	0.520
LDL	1.00	0.996	1.005	0.840
HDL	0.994	0.976	1.013	0.534
Triglycerides	1.001	0.998	1.003	0.605
HBA1c	0.835	0.741	0.941	0.003
RBS	0.995	0.992	0.998	0.001

The Univariate logistic regression analysis has shown statistically significant association across the groups with age, gender, creatinine, HBA1c, RBS explanatory factors as presented in the above table (Table 36)

DISCUSSION:

Cardiovascular diseases are one of the most important causes of mortality across the globe. Our study aimed to study to evaluate the profile of patients with normal coronaries and abnormal coronaries with CAD and further assess their clinical, metabolic profile and risk factors.

Clinical Profile:

The present study population was 602 subjects with a mean age of 58.16 ± 12.41, ranging between 19 years to 92 years. According to the coronary angiography report, the subjects were divided into normal CAG and abnormal CAG. Normal is defined here as no visible disease or luminal irregularities (less than 50%) as seen in coronary angiography[77]. Among the 602 subjects, 125 (20.76%) participants had normal CAG report, and 477 (79.24%) had abnormal CAG report. Among the abnormal CAG group, males were 361(75.7%), and females were 116(24.3%). The male subjects were dominant in both groups.

Chest pain can be a presenting complaint in patients with a normal report on coronary angiography. In patients with chest pain, normal angiography is five times more common in women than in men.[77] A study by Pinaire J et al[68] has shown a greater incidence of myocardial infraction among males than women. Our present study also shows a preponderance to males comparative to females which is further in accordance with global reports.[4] In our study, among the people with normal coronary angiography**,** 68 (54.4%) were male and 57 (45.6%) were female. The difference in the proportion of gender between study groups was statistically significant.

In our study, the evidence of abnormal coronary artery was among the age between 40-60 and 61-80 years of age with male preponderance. A similar study by Zamani et al[72] study showed a mean age of 57.8 years. These findings were in accordance with the present study.

Among the abnormal CAG (n=477) subjects, 233 subjects had the single-vessel disease (SVD), 138 subjects had double vessel disease (DVD), and 106 subjects had triple vessel disease (TVD). The frequency of single-vessel disease was more common in younger patients as to compared to older patients as reported by studies,[78,79] whereas, the patients of older age were found to have multivessel disease reported in coronary angiography.[78]

The mean BMI and mean waist circumference of subjects between the coronary angiography groups showed similar mean values with no statistical differences. The mean BMI of subjects in normal coronary angiography was 23.52 ± 4.16, and it was 23.15 ± 3.69 in abnormal coronary angiography. (P Value 0.340).

The mean waist circumference of subjects in normal coronary angiography was 76.62 ± 7.03, and it was 77.54 ± 7.19 in abnormal coronary angiography. (P value 0.199).

The difference in the mean hip circumference and the mean waist-hip ratio between the two groups was statistically significant, but the difference was very minimal in our study. The mean hip circumference of subjects in normal coronary angiography was 93.49 ± 8.54, and it was 95.92 ± 7.61 in abnormal coronary angiography. (P value 0.002). The mean waist-hip ratio of subjects in normal

coronary angiography was 0.82 ± 0.06, and it was 0.81 ± 0.05 in abnormal coronary angiography. (P value 0.022).

Alkhawam H et[80] al studied obesity as an individual risk factor for CAD. This study showed individuals BMI > 30 was at increased risk for CAD. A similar study by Hossieni et al[78] had a study population with a mean BMI of 27.6 ± 4.4 kg/m2. In our study, the mean BMI among both groups did not exceed the range to cause obesity.

Metabolic PROFILE:

The concept that ischemic heart disease may be caused by abnormalities of the microcirculatory vessels has been proposed many years ago. It has become apparent that microcirculation is important for the balance of blood supply and myocardial oxygen demand.[81] However, the pathophysiology of the disease process is yet to be completely comprehended. In the present study, random blood sugar, glycosylated hemoglobin, creatinine and lipid profile have been studied.

The role of dyslipidemia in the development of CAD has been recorded to be greater in younger patients compared to older patients.[78, 82] A study by Sudhir et al[83] has shown that greater values of serum HDL, LDL and cholesterol can lead to more number of new ectatic lesions. In the study by Senta Graf et al.[84] hyperlipidemia showed no significant relation to coronary flow reserve. These are similar to our results. Homogeneity of lipid levels probably caused by pretreatment with statins may explain the lack of correlation with abnormal CAG. This may be due to the known action of statins on plaques in circulation.[84]

Among the people with normal coronary angiography, the mean cholesterol level was 164.7 ± 53.9 and in SVD 1168.02±47.74, DVD 175.51±52.78, TVD 158.29±53.58. (P value 0.521). Among patients with normal coronary angiography, the mean LDL level 109.22± 52.22 and in SVD, 108.96±42.58, DVD, 112.75±46.29 and TVD 101.02±43.95. (P value 0.752). Among the people with normal coronary angiography, the mean HDL level was 38.98± 10.14 and in SVD 40.43±11.34, DVD 40.30±10.06, TVD 37.08±10.04. (P value 0.535). Among the people with normal coronary angiography, the mean triglyceride level was 141.30± 59.84 and in SVD 135.36±78.23, DVD 141.03±70.17, TVD 138.25±64.68. (P value 0.193).

A study by Sudhir and et al[83] witnessed an increase in the incidence of ectasia lesions with progressive increase in cholesterol, LDL and HDL values, whereas there was no association found between diabetes, hypertension, smoking and HTN with CAD. In our present study, we found an association between diabetes and hypertension, with no association of hypercholesteremia. We hypothesised that a significant study population may already be on statins and other lipid-lowering therapy prior to undergoing coronary angiography resulting in these conflicting results.

Majority of study population 399(66.3%) had HbA1c 5.1 to 7%, 76(12.6%) had 7.1 to 9 % and 60(10%) had 9.1 to 11%. (P value <0.001). Among the people with normal coronary angiography, the median RBS was 102 (IQR 84.5 to 149), and it was 127 (IQR 99 to 199.5) in people with abnormal coronary angiography. The difference in the RBS and HbA1C between two groups was statistically significant (P Value <0.001). Diabetes mellitus is associated with a 2 to 4-fold increased mortality risk from heart disease. Further, there is an increase in mortality post-myocardial

infarction in patients with diabetes mellitus [DM]. It has also been studied that maintaining optimal glycemic control for a median of 3.5 to 5 years does not still reduce cardiovascular events.[85]

The pathophysiology of the connection between diabetes mellitus and cardiovascular disease (CVD) is multifaceted. Diabetes affects the heart muscle, causing both systolic and diastolic heart failure. Evidence-based medicine has proven that there is myocardial damage after ischemic events due to hyperglycemia. Patients with DM have high cholesterol and triglycerides. There are abnormalities in the structure of the lipoprotein particles. In diabetes, small dense LDL cholesterol is increased. These cause more atherogenic plaques because they form stronger attachments to the wall of the arteries and they are easily oxidised. Oxidised LDL is pro-atherogenic as they behave in a “foreign” manner to their immune system.

Cascade of events follows like leukocytes attachment to the vessel intima, the formation of foam cells and stimulating the proliferation of leukocytes, endothelial cells, and smooth muscle cells, thus forming the atherosclerotic plaque and leading to coronary artery disease.

Among the people with normal coronary angiography, the median creatinine was 0.81 (IQR 0.66 to 1.03), and it was 0.94 (IQR 0.78 to 1.16) in people with abnormal coronary angiography. (P value <0.001). Renal function is reflected by the serum levels of creatinine. Serum creatinine levels evident, even at small amounts are related to poor prognosis in cases of cardiovascular patients.[86] A retrospective study[86] had analysed the creatinine levels and its association of coronary artery disease among patients with no overt renal dysfunction. This study showed that the creatinine levels ≥ 1.5 mg/dl had total stenosis in a greater percentage of the population, and therefore

it could be an independent predictor for total stenosis score. The present study has also shown significant creatinine levels among the abnormal coronary angiography group.

Risk factors:

There are studies[79, 87, 88] which have shown the occurrence of CAD at much younger age leading to an increase in its prevalence.[87] When the pattern of risk factors among the older and younger age group with CAD was studied, it was found that younger CAD patients had inherited risk factor especially lipoprotein (a) from their parents.[89] Another study[78] has seen smoking among young patients to be the risk factor. Hence, many factors are present, which can act as independent risk factors among young adults for developing CAD.[90]

In our study, the difference in smoking and alcohol across the two groups is found to be insignificant. Further on analysing the diseased population, 20.12% were smokers, 28.78% chewed tobacco, 9.2% consumed alcohol.

The difference in tobacco chewing across the CAG report is found to be significant with a P-value of 0.044, with 33.96% suffering from TVD. The proposed means by which smoking results in cardiovascular events include the enhancement of a state of atherosclerosis with reduction of the vascular lumen and induction of a hypercoagulable state, further promoting the risk of acute thrombosis. Smoking of cigarettes blunts the vascular endothelial activity and triggers the sympathetic nervous system. This can result in an unseemly diminution in or failure to increase coronary blood flow in response to a rise in myocardial oxygen demand. Collectively with longstanding atherosclerotic injury from smoking, these effects promote ischemic

cardiac events. Coronary endothelial dysfunction patently escalates the risk of cardiovascular events.

In a study by Centers for Disease Control, USA, nicotine exposure was examined by quartiles of blood cotinine as follows: less than or equal to 0.7 nanograms per milliliter (ng/mL), 0 to 1.4, 1.5 to 2.7, and 2.8 to 14.0. Hazard ratios for cardiovascular disease, which included deaths and non- fatal MIs, were significantly increased at all upper quartiles (hazard ratios, 1.43 to 1.57) compared with the lowest exposure quartile, after adjustment for established cardiovascular disease risk factors. The sizable cardiovascular risk attributable to passive exposure to cigarette smoke (USDHHS 2006) and the practice of not excluding from the control group persons who had secondhand smoke exposure in previous studies have resulted in underestimation, in many research reports, of the effects of active smoking compared with no exposure to cigarette smoke.[91] The smoking-induced variations in vasomotor function seem to be substantively reversible, which highlights the importance of smoking cessation programs and policies to endorse a smoke-free milieu.[92]

Studies have found that minimum consumption of alcohol can advance changes at the molecular levels, thereby reducing the risk of heart disease while also enhancing a rise in certain molecules that promote heart disease. Alcohol also may affect the risk of heart disease by acting on other pathways involved in a variety of physiological processes related to heart disease. This correlation is subject to modulation by genetic factors. As per the meta-analysis of randomized trials by Rimm et al,[93] alcohol intake has an effect on HDL-C, triglyceride, and fibrinogen levels and is expected to lower a person's risk of coronary heart disease by almost 25 percent, a

figure that correlates well with the findings of observational studies.[94] Nonetheless, heavy drinking is associated with increased CHD risk.

The statistics of risk factors of CVD in India has been changing more quickly over the years among the countryside and town population.[95, 96] Tobacco as a risk factor, either in the form of smoke or smokeless is widely prevalent among the rural population than compared to the urban population. The rate of literacy among the rural population is combatively less than the urban population.[95] Although in the present study, the smoking history across the groups was insignificant, tobacco chewing was found to be a significant risk factor.

In the present study, the difference in hypertension across the CAG report was found to be significant with a P-value of 0.001, where a majority of 51.45% of the hypertensives had DVD. The difference in diabetes across coronary angiography report was found to be significant with a P-value of <0.001, with the majority of them belonged to TVD followed by DVD and SVD.

Correlating to these results, a study by Yilmaz et al[11] have showed an association of coronary abnormal lesion with hypertension as a risk factor but not with diabetes mellitus, smoking or dyslipidemia.

The difference in diabetes across coronary angiography report is found to be significant with a P-value of <0.001. Literature has shown, diabetes population having a greater risk of developing arteriosclerosis with a great burden of plaque formation[97] along with endothelial[98] and platelet dysfunction[99], further promoting the process. A similar proportion of hypertension (40.8%) and diabetics (59.4 %) patients were found among the CAD group in Hossieni et al[78] study as compared to our study.

The comorbidities presented by the study population had a greater percentage of COPD cases the following diabetes with 13.3%, CVA with 10% and other comorbidities in small proportions. COPD usually associated with CAD and CVS has an increased mortality rate among COPD. A study had identified various clinical factors such as decreased HDL, left heart failure and hypertension as independent prognosticators for the incidence of CAD in COPD.[100] Thus, the presence of comorbidities increase the burden of CAD in such patients.

The difference in lifestyle and exercise across the coronary angiography report is found to be insignificant in our study. However, there is emerging evidence of several negative health consequences associated with sedentary behaviour (SB), which has been defined as any waking behaviour depicted by an energy expenditure ≤1.5 metabolic equivalents of task (METs), while in a seated, reclined or supine posture.[101] The health consequences associated with SB were investigated in a series of preclinical studies conducted in the early 2000s. A decrease in lipoprotein lipase activity occurred in a day`s time. Within the skeletal muscle cells, PGC-1α (proliferator-activated receptor γ coactivator 1-α), a key regulator of mitochondrial mass/function, and NAD-dependent deacetylase SIRT3 (sirtuin-3), which promotes the expression of PGC-1α, have been found to be lower in sedentary individuals.[102]

With an era of new technologies introduced, a situation is created where manual working is restricted, creating a wide-spread state of inactivity among both rural and urban population.[35] Over the years, dietary habits among the Indian population has changed with unhealthy foods habits with increased consumption of processed and high-calorie fast food.[103] Gus et al[38] study has found an association of unhealthy dietary habits along with a sedentary lifestyle with the prevalence of CAD.

However, in the present study, the difference in diet, daily activity and exercise across coronary angiography report was found to be insignificant.

The univariate logistic regression analysis displayed a statistically significant correlation with coronary angiography with age, gender, creatinine, HbA1c, RBS. Hence preventive health programs on cardiovascular fitness must focus on population from an early age. Lifestyle, monitoring of blood sugar as a priority over lipid levels, avoidance of tobacco and sedentary behaviour should be emphasised in these programs making the goal optimal cardiovascular health.

CONCLUSIONS

- Males were more at risk for coronary artery disease as per our study population.
- Waist hip ratio and hip circumference were statistically significant, and increased waist-hip ratio was a risk factor for CAD.
- Lifestyle, exercise, vegetarian diet were not significantly protective against the development of CAD in our study. Smoking and Alcohol consumption were not found to be significant risk factors for CAD on our study
- Tobacco chewing was found to be a significant risk factor for CAD in our study.
- Presence of comorbid metabolic conditions like hypertension and diabetes mellitus were both noted to be significant risk factors for CAD in our study
- RBS, HbA1c, Serum creatinine and Hemoglobin were found to be significantly abnormal in the group with diseased coronary angiographies indicating these parameters as individual risk factors for CAD (P Value <0.001).
- However, the difference in the LDL, HDL, Triglycerides and cholesterol were not statistically significant in our study. (P Value 0.752, 0.535, 0.837. 0.193).
- The Univariate logistic regression analysis displayed a statistically significant correlation with coronary angiography with age, gender, creatinine, HBA1c, RBS.

SUMMARY

The present study of 602 subjects admitted in wards and ICU of our hospital for coronary angiography was done from January 1st 209 to December 31st 2019. The mean age of the patients was 58.16 years ranging between 19 years to 92 years. Among the 602 subjects, 125 participants had normal CAG report and 477 participants had abnormal CAG report. The male subjects were dominant in either group. Among the abnormal CAG subjects, 233 subjects had single-vessel disease (SVD), 138 subjects had double vessel disease (DVD), and 106 subjects had triple vessel disease (TVD). A comparative analysis was done between normal and abnormal coronary angiographies.

We concluded that increased waist-hip ratio, tobacco chewing, comorbid metabolic conditions like hypertension and diabetes mellitus were risk factors for CAD.

Lifestyle, exercise, vegetarian diet were not significantly protective against the development of CAD in our study. Tobacco chewing was discovered to be a significant risk factor for CAD in our study. It was learnt that smoking and alcohol consumption were not significant risk factors for CAD on our study. Random blood sugar, glycosylated hemoglobin, serum creatinine and hemoglobin were found to be significantly abnormal in diseased coronary angiographies indicating these parameters as individual risk factors for CAD. However, serum lipid profile was insignificant across the groups in our study.

We propose that an in-depth study of a larger sample size compare the above issues with further variables. A prospective follow up study can also be considered to give a broader view of the development of coronary artery disease.

Limitations:

- The study was performed in a tertiary center
- Study was not performed on a cohort of a single disease
- The number of controls undergoing coronary angiography was less in this study group

Recommendations

Large epidemiological studies in India with respect to risk factors for CAD should be researched at primary, secondary and tertiary levels. This helps in planning good intervention programs at all these levels, thereby further reducing the incidence of CAD.

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ANNEXURE I – CONSENT FORM

Title of Research Study:

A Comparison of Clinical Profiles of Patients with Normal and Abnormal Coronary arteries: A one-year Case Control Study in KLES Hospital Population

Principal Investigator: **Guide:**

Introduction and Purpose:

Cardiovascular diseases, especially coronary heart disease (CHD), are epidemic in India. The Registrar General of India reported that CHD led to 17% of total deaths and 26% of adult deaths in 2001-2003, which increased to 23% of total and 32% of adult deaths in 2010-2013.

Case-control studies have reported that important risk factors for CHD in India are dyslipidemias, smoking, diabetes, hypertension, abdominal obesity, psychosocial stress, unhealthy diet, and physical inactivity

You are being asked to enroll yourself in the above said research as you are eligible for participation in this study being conducted at J N Medical college, KLES Dr. Prabhakar Kore Charitable Hospital, Belagavi from Jan 2018 to Dec 2018 conducted by Dr. Aditi Rao Post graduate student in the Dept. of Medicine under the guidance of Dr. V A Kothiwale.

Purpose of the study

It is a study designed to evaluate and compare the clinical and metabolic profiles of normal and abnormal coronary arteries and to assess for any risk factors.

Eligibility

He /She is a candidate undergoing elective coronary angiography as a diagnostic procedure.

Procedure:

If you agree to be part of the research study, you will be asked the relevant history and will be subjected to relevant clinical examination and investigations. You will also have to give blood and urine samples for the necessary investigations.

Risk and Benefits:

The only risk and possible discomfort you might get is while taking blood from your arm for the investigations. It may cause swelling, pain, redness (rarely happens) at the site from where the blood is drawn.

You may not be benefitted by these investigations but you will be part of this study which is going to be useful to others in the future.

Alternatives: Taking part in this study is voluntary. You may choose not to take part in this study. If you decide to take part you can later change your mind and withdraw from the study. Your decision will not change the present or future health care or other services that you receive. The study doctor or sponsor may stop your participation in this study at any time. If you choose not to take part in the study, you will receive the standard treatment for patients with your condition.

Privacy and Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. The code numbers will identify you in this research record. Information from this study may be published but your identity will be confidential in any publication.

Institution / Sponsor's policy:

Does not apply to this research

Financial incentives for participation:

You will not be paid / offered any gifts /incentives for participating in the study.

Authorization to publish the results:

The results of the study would be forwarded to the KLE University, Belagavi as part of requirement towards the completion of MD degree, review and publishing.

In case of the queries during study or in future you may contact following persons,

1. Dr. Roopa Bellad, Chairman,
J.N.M.C Ethical Committee for
Human Research
9448113403

CONSENT FORM

I voluntarily agree to take part in this study by signing below. I may withdraw at any time. I am not giving up any of my legal rights by signing this form. My signature below indicates that I have read this consent form, or it has been read to me and has been explained to me in my vernacular language and all my questions have been answered. I will be given a copy of this consent form.

Signature / Left Thumb print of the Participant or legally authorized representative

Participant's name :……...

Signature / Left thumb impression :……...

of the participant

Name of the legally authorized :……...

representative / guardian

Signature / Left thumb impression :……...

Witness' name :……...

Signature / Left thumb impression :……...

Investigator's name and signature :……...

Date:

Place

ANNEXURE-II

PROFORMA

A Comparison of Clinical Profiles of Normal and Abnormal Coronary arteries: A Case Control Study

Name: Age: Sex:

IP Number

Admission Diagnosis

Diet: Veg Mixed

Life style:

Exercise:

Comorbidities	Yes/No	Duration
Hypertension		
Diabetes		
Others		

Personal History

Alcohol

Smoking

Tobacco

Clinical Examination

Pulse

BP

Systemic examination:

CVS:

RS:

PA:

CNS:

Height:

Weight: BMI:

Waist circumference:

Hip circumference: WHR:

Investigations

Hb : [g/dl] Creatinine

HbA1c : RBS : [mg/dl]

FLP: Cholesterol

Triglycerides:

HDL:

LDL:

Coronary Angiography Report:

ANNEXURE-III- ETHICAL CLEARANCE LETTER

K.L.E.UNIVERSITY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
(Accredited 'A' Grade by NAAC)

Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 36

Date: 22/11/2017

REG NO. BG0117001

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"A COMPARISON OF CLINICAL PROFILES OF NORMAL AND ABNORMAL CORONARY ARTERIES: A CASE CONTROL STUDY"**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Bellad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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ANNEXURES IV - MASTER CHART

Sl no	Age	Gender	Veg	Mixed	SMOKING	ALCOHOL	TOBACCO	LIFESTYLE	EXERCISE	Hypertension	Diabetes	Other comorbidities	Pulse	SBP	DBP	HEIGHT	WEIGHT	BMI	VAIST CIRCUMFERENCE	HIP CIRCUMFERENCE	WAIST HIP RATIO	CAG REPORT	HEMOGLOBIN	HBA1C	RBS	CREATININE	CHOLESTEROL	LDL	HDL	TRIGLYCERIDES
1	67	M		YES				SEDENTARY	NO	YES			73	120	70	158	48	19.22768787	69	86	0.802325581	DVD	13.4	10.4	321	0.93	235	168	40	191
2	32	M		YES				ACTIVE	NO	YES			75	190	100	170	59	20.41522491	74	98	0.755102041	DVD	15.1	5.9	128	0.88	136	84	26	131
3	58	F		YES				SEDENTARY	NO	YES	YES		110	120	70	160	52	20.3125	69	93	0.741935484	TVD	11.1	10.3	398	0.8	107	38	39	151
4	60	M		YES	YES			MODERATE	OCCASIONAL	YES			84	150	90	174	82	27.08415907	79	100	0.79	TVD	12.7	6.1	132	1.1	210	173	34	93
5	53	M		YES			YES	SEDENTARY	NO		YES		86	130	80	158	58	23.23345618	78	96	0.8125	DVD	13.5	8.3	191	0.88	200	150	35	90
6	48	M	YES				YES	MODERATE	NO				105	130	90	170	70	24.22145329	74	100	0.74	DVD	15.3	6	107	0.78	214	139	49	129
7	40	M		YES			YES	SEDENTARY	NO	YES		TB	80	120	80	162	70	26.6727633	73	98	0.744897959	N	11.7	5.7	94	0.99	200	120	45	130
8	65	F	YES					SEDENTARY	NO	YES	YES		90	110	70	158	56	22.43230252	69	78	0.884615385	SVD	11.5	9.6	372	0.97	160	91	41	140
9	50	M	YES					ACTIVE	DAILY				80	110	70	158	59	23.63403301	68	93	0.731182796	N	14.2	6	105	0.82	306	218	36	261
10	66	M	YES					ACTIVE	DAILY	YES	NEWLY DETECTED		127	150	90	170	70	24.22145329	78	104	0.75	TVD	13.5	7.6	116	0.81	130	56	56	89
11	54	M	YES					SEDENTARY	NO				84	140	90	166	58	21.04804761	69	88	0.784090909	SVD	14.3	6	128	0.84	185	127	39	96
12	60	M		YES				SEDENTARY	NO	YES			98	160	90	170	52	17.99307958	72	93	0.774193548	SVD	13.1	5.6	173	0.64	174	94	35	225
13	62	M		YES			YES	MODERATE	OCCASIONAL				80	130	80	160	60	23.4375	72	86	0.837209302	TVD	13.3	5.5	96	0.9	165	134	29	153
14	65	M		YES				ACTIVE	DAILY	YES			75	180	90	170	67	23.183391	74	98	0.755102041	N	14.4	5.7	99	1.32	170	120	35	100
15	65	M		YES		YES		SEDENTARY	NO		YES		90	110	70	160	72	28.125	81	100	0.81	SVD	13.3	10.3	183	1.12	121	65	41	50
16	82	M		YES	YES			MODERATE	OCCASIONAL	YES			80	130	70	166	82	29.75758456	90	112	0.803571429	TVD	10.9	5.9	84	1.11	116	59	49	42
17	50	M		YES				SEDENTARY	NO	YES			94	110	80	165	70	25.71166208	84	97	0.865979381	DVD	17.3	6.6	149	0.97	324	250	53	103
18	54	M	YES				YES	ACTIVE	DAILY	YES	YES		70	110	70	159	52	20.56880661	70	82	0.853658537	TVD	15.1	9.8	188	1.04	167	91	42	172
19	44	M		YES				MODERATE	OCCASIONAL		NEWLY DETECTED		60	140	80	169	63	22.05805119	78	90	0.866666667	SVD	13.4	6.9	173	0.82	218	126	51	207
20	64	M		YES				SEDENTARY	OCCASIONAL	YES			83	140	100	172	68	22.98539751	82	96	0.854166667	SVD	12.2	5.3	137	1.07	175	120	41	89
21	65	M		YES				SEDENTARY	NO	YES	YES		83	100	60	163	49	18.44254582	70	82	0.853658537	TVD	13.9	6.3	155	0.76	184	134	28	110
22	68	M		YES				SEDENTARY	OCCASIONAL	YES	YES		80	90	60	167	74	26.53375883	84	97	0.865979381	SVD	11.9	8.6	217	1.4	150	89	31	104
23	61	M	YES					ACTIVE	WEEKLY	YES			80	110	70	165	60	22.03856749	78	97	0.804123711	DVD	23.6	6.3	121	0.66	205	132	36	184
24	47	M	YES					MODERATE	OCCASIONAL		YES		80	120	70	168	72	25.51020408	81	98	0.826530612	SVD	13.5	7.6	147	0.83	100	120	29	90
25	42	M	YES		YES		YES	ACTIVE	DAILY				102	110	70	165	53	19.46740129	68	90	0.755555556	DVD	12.2	6	109	1.6	206	121	45	198
26	71	M	YES					SEDENTARY	OCCASIONAL				80	160	100	170	59	20.41522491	69	84	0.821428571	TVD	13.6	5.1	96	0.9	128	80	31	86
27	59	M		YES			YES	SEDENTARY	WEEKLY		YES		130	90	60	165	50	18.36547291	68	79	0.860759494	TVD	12.9	7.6	179	1.2	141	180	35	93
28	73	M		YES				SEDENTARY	OCCASIONAL				74	120	80	168	92	32.59637188	94	106	0.886792453	DVD	15.1	5.7	85	0.97	142	152	39	180

29	70	M		YES	YES			SEDENTARY	DAILY		YES		92	110	70	166	64	23.22543185	74	96	0.770833333	DVD	13.8	10.9	431	1.27	220	158	38	190
30	60	M		YES				SEDENTARY	OCCASIONAL				100	110	70	160	52	20.3125	77	91	0.846153846	TVD	8.9	5.8	77	1.7	170	159	40	115
31	42	M		YES		YES	YES	SEDENTARY	NO	YES		ORAL CAVITY MALIGNANCY	86	110	90	150	68	30.22222222	84	96	0.875	SVD	14.7	5.9	126	1.02	120	60	45	60
32	66	M		YES		YES		SEDENTARY	NO		YES		80	140	80	178	98	30.93043808	90	106	0.849056604	SVD	8.9	6	70	0.79	170	100	42	100
33	51	M		YES	YES	YES	YES	SEDENTARY	NO		YES		80	140	80	168	65	23.03004535	80	98	0.816326531	SVD	10	9.9	160	1.17	116	60	37	96
34	68	M	YES		YES			SEDENTARY	OCCASIONAL	YES		DEEP VEIN THROMBOSIS	86	150	90	158	70	28.04037814	86	100	0.86	N	10.3	8.2	93	1.25	113	50	39	138
35	51	M		YES				SEDENTARY	NO		YES		88	110	70	168	80	28.3446712	86	100	0.86	TVD	14.4	9.9	319	0.84	250	170	45	155
36	48	M	YES					MODERATE	OCCASIONAL				84	110	70	160	60	23.4375	77	87	0.885057471	N	16.1	6.1	84	0.87	210	180	36	109
37	65	F		YES				SEDENTARY	OCCASIONAL		NEWLY DETECTED		34	90	60	150	73	32.44444444	80	98	0.816326531	TVD	13.1	7.7	461	1.16	169	107	42	101
38	53	F	YES					MODERATE	OCCASIONAL	YES	YES		94	140	80	166	74	26.85440557	77	97	0.793814433	SVD	12.8	10.5	136	0.42	201	109	36	120
39	65	M	YES					MODERATE	OCCASIONAL	YES			54	120	70	164	73	27.14158239	78	96	0.8125	SVD	15.2	6.5	150	0.98	256	175	50	157
40	50	F	YES				YES	MODERATE	DAILY				102	100	70	145	38	18.07372176	68	90	0.755555556	N	11.2	4.7	102	0.73	150	170	45	160
41	65	M	YES					MODERATE	WEEKLY	Y			68	160	90	171	76	25.99090318	86	101	0.851485149	N	13	4.9	76	0.94	180	165	38	167
42	53	M		YES	YES			MODERATE	OCCASIONAL				80	100	70	170	56	19.37716263	74	91	0.813186813	SVD	16.8	5.2	147	1.05	200	150	34	190
43	72	M	YES					SEDENTARY	WEEKLY	Y	YES		84	90	60	164	58	21.56454491	78	96	0.8125	N	9.6	13.2	188	4	120	61	47	62
44	74	M		YES			YES	SEDENTARY	OCCASIONAL		NEWLY DETECTED		88	130	80	170	70	24.22145329	76	94	0.808510638	SVD	13.3	7.1	133	1.28	172	106	47	97
45	64	M		YES	YES			SEDENTARY	OCCASIONAL		YES		86	120	80	156	52	21.36752137	74	90	0.822222222	SVD	15.9	12.4	197	0.85	169	92	56	105
46	60	M		YES				MODERATE	DAILY				80	130	80	162	50	19.05197378	80	96	0.833333333	DVD	14.5	5.3	107	0.94	222	158	41	116
47	76	M		YES				MODERATE	OCCASIONAL		YES		70	150	90	168	70	24.8015873	76	96	0.791666667	DVD	12.3	6.1	222	2.28	150	120	38	105
48	36	M		YES	YES			SEDENTARY	NO				84	110	70	169	91	31.86162949	87	100	0.87	SVD	11.8	6	95	0.87	156	84	20	260
49	68	M	YES				YES	SEDENTARY	NO		NEWLY DETECTED	COPD	80	80	50	154	49	20.66115702	69	89	0.775280899	TVD	12.9	8.5	239	3.85	140	87	25	150
50	53	M		YES			YES	ACTIVE	DAILY				88	130	90	158	48	19.22768787	71	89	0.797752809	SVD	15.5	5.7	103	0.85	145	89	38	180
51	60	M		YES				SEDENTARY	NO				70	120	70	164	85	31.60321237	85	98	0.867346939	TVD	10.7	6	65	0.98	113	48	37	140
52	70	M		YES				ACTIVE	OCCASIONAL	YES	YES		80	110	80	168	59	20.90419501	74	89	0.831460674	N	12.1	8.9	88	0.83	151	140	30	180
53	70	M		YES				SEDENTARY	NO	YES	YES		48	110	80	153	76	32.4661455	80	100	0.8	N	8.4	5.9	85	1.89	180	130	25	150
54	55	M		YES				SEDENTARY	OCCASIONAL				72	120	70	168	64	22.67573696	83	104	0.798076923	TVD	14.6	5.9	79	0.8	196	116	37	214
55	48	F		YES				SEDENTARY	WEEKLY				98	110	80	158	72	28.84153181	90	110	0.818181818	N	11.6	6.2	135	0.62	176	102	55	93
56	65	M	YES		YES		YES	ACTIVE	NO				60	130	90	159	42	16.61326688	69	86	0.802325581	SVD	14.2	5.8	82	0.95	154	100	31	113
57	49	F		YES				SEDENTARY	NO				89	110	70	164	80	29.74419988	87	109	0.798165138	N	14.3	6.4	123	0.9	156	87	54	73
58	60	F	YES					SEDENTARY	WEEKLY	Y			84	110	80	162	70	26.6727633	74	99	0.747474747	TVD	8.6	6.6	91	0.68	149	83	50	81
59	65	F	YES					SEDENTARY	OCCASIONAL				114	120	70	156	60	24.65483235	76	90	0.844444444	TVD	10.7	6.1	85	0.79	167	109	46	61
60	67	M	YES					SEDENTARY	NO				86	150	90	170	62	21.4532872	77	98	0.785714286	SVD	12.2	9.4	158	0.95	194	127	52	77
61	57	M		YES	YES	YES	YES	MODERATE	NO	Y	Y		83	100	60	170	68	23.52941176	82	104	0.788461538	DVD	13.6	10	424	0.68	117	57	31	143
62	73	M	YES					SEDENTARY	NO	Y	Y		83	110	70	166	72	26.12861083	78	100	0.78	SVD	14	11.4	364	1.31	185	116	39	151
63	50	M		YES				SEDENTARY	NO				93	140	90	170	70	24.22145329	86	100	0.86	SVD	12.5	6.1	148	0.7	167	109	46	61
64	35	M		YES				MODERATE	OCCASIONAL		YES		120	130	90	156	50	20.54569362	65	85	0.764705882	SVD	15.8	9.4	471	1.9	194	127	52	77
65	70	M		YES				SEDENTARY	NO	Y			73	110	70	158	48	19.22768787	69	86	0.802325581	DVD	14.8	5.7	119	1.06	232	185	35	140
66	67	F	YES					SEDENTARY	OCCASIONAL	Y	YES		90	110	70	160	52	20.3125	69	83	0.831325301	SVD	11.6	8.6	262	1.19	272	176	42	272
67	81	M	YES		YES			ACTIVE	DAILY				68	130	90	158	45	18.02595738	65	79	0.82278481	SVD	13	5.9	124	0.82	203	130	48	125
68	60	F		YES			YES	ACTIVE	DAILY				80	100	70	152	52	22.50692521	65	80	0.8125	TVD	12.3	6.6	97	0.56	149	83	50	81

69	77	M		YES				SEDENTARY	OCCASIONAL		YES		102	180	90	162	58	22.10028959	69	90	0.766666667	TVD	15.5	7.1	205	1.03	167	109	46	61
70	39	M	YES					ACTIVE	WEEKLY				104	160	110	166	53	19.23356075	70	95	0.736842105	SVD	17.2	9.2	353	0.91	212	132	30	248
71	60	M		YES				SEDENTARY	DAILY				72	120	80	170	65	22.49134948	76	94	0.808510638	SVD	12.5	5.6	129	0.64	218	156	42	100
72	52	F	YES					SEDENTARY	OCCASIONAL		NEWLY DETECTED		116	110	70	154	56	23.61275089	75	94	0.79787234	N	14.4	12.2	601	0.63	177	85	62	149
73	27	M		YES	YES		YES	MODERATE	DAILY				120	120	70	168	70	24.8015873	82	97	0.845360825	SVD	14	5.2	112	0.76	154	102	29	95
74	65	M	YES					MODERATE	OCCASIONAL				84	110	70	164	80	29.74419988	90	113	0.796460177	SVD	13.4	6	102	0.75	176	102	55	93
75	70	M	YES				YES	SEDENTARY	DAILY				74	110	70	163	45	16.93703188	76	90	0.844444444	SVD	15.2	6	89	1.04	154	100	31	113
76	82	M		YES				MODERATE	NO				80	190	90	164	60	22.30814991	82	92	0.891304348	SVD	13.8	6.5	126	1.05	156	87	54	73
77	62	F		YES			YES	ACTIVE	DAILY	Y	5		103	170	90	158	52	20.82999519	74	97	0.762886598	SVD	11.8	8.4	299	0.62	153	77	56	102
78	71	M	YES					MODERATE	NO		NEWLY DETECTED		90	110	70	156	49	20.13477975	68	83	0.819277108	SVD	11.3	6.2	103	1.3	115	55	51	114
79	59	M		YES	YES		YES	MODERATE	OCCASIONAL	Y	Y		80	120	70	167	54	19.36247266	78	94	0.829787234	TVD	13.5	4.7	171	0.83	226	166	36	120
80	64	M		YES	YES		YES	SEDENTARY	NO				72	126	80	158	45	18.02595738	69	80	0.8625	SVD	9.8	6.4	92	0.79	167	101	46	102
81	55	M	YES					SEDENTARY	NO				94	160	90	170	59	20.41522491	68	81	0.839506173	SVD	16.7	4.9	128	0.98	153	81	41	155
82	53	M		YES				SEDENTARY	OCCASIONAL	Y	Y		130	130	90	167	76	27.25088745	78	98	0.795918367	DVD	13.2	11.5	345	0.88	127	64	30	165
83	65	F		YES				SEDENTARY	DAILY	Y			80	130	80	165	60	22.03856749	76	96	0.791666667	SVD	7.6	5.6	101	1.41	159	113	44	66
84	48	F		YES				MODERATE	DAILY		NEWLY DETECTED		120	160	90	167	67	24.02380867	81	96	0.84375	SVD	12.2	13	162	0.61	188	142	46	125
85	49	F	YES				YES	SEDENTARY	NO	Y			100	150	90	166	60	21.77384236	73	96	0.760416667	SVD	6.5	5.5	106	0.62	208	123	56	144
86	53	M		YES				ACTIVE	NO	Y			80	110	70	168	68	24.09297052	76	98	0.775510204	SVD	15.5	5.7	103	0.85	200	127	35	190
87	66	F	YES					SEDENTARY	NO	Y			66	100	60	157	43	17.44492677	68	83	0.819277108	DVD	11.2	5.5	118	1.58	141	66	25	486
88	72	M	YES			YES	YES	ACTIVE	NO				98	160	100	160	63	24.609375	78	98	0.795918367	DVD	11.3	6.5	118	1.06	126	150	36	140
89	32	M		YES				MODERATE	NO	Y	NEWLY DETECTED		70	100	60	164	58	21.56454491	74	95	0.778947368	DVD	17.7	6.4	85	0.69	177	78	34	324
90	55	M	YES					ACTIVE	NO	Y			56	100	60	169	70	24.50894577	80	98	0.816326531	DVD	13.6	6.5	148	0.74	218	145	50	116
91	60	M	YES					MODERATE	OCCASIONAL				80	140	90	170	82	28.37370242	89	114	0.780701754	SVD	17.1	4.6	89	1.67	178	120	42	79
92	59	F	YES				YES	SEDENTARY	NO	Y			100	90	60	158	67	26.83864765	76	98	0.775510204	TVD	10	6.2	126	0.71	154	100	31	113
93	55	M		YES				MODERATE	WEEKLY				74	110	80	151	53	23.24459454	65	80	0.8125	DVD	10.1	5.9	110	0.99	156	87	54	73
94	50	F		YES			YES	SEDENTARY	OCCASIONAL				78	100	60	147	50	23.1385071	69	84	0.821428571	N	10.5	5.5	90	0.72	153	77	56	102
95	78	M		YES				SEDENTARY	NO	Y	Y		86	150	90	166	68	24.67702134	78	98	0.795918367	SVD	13.3	7.8	228	1.43	127	64	30	165
96	63	M		YES				MODERATE	OCCASIONAL				80	120	80	162	65	24.76756592	86	98	0.87755102	SVD	14.6	5.9	119	0.07	159	113	44	66
97	56	M		YES				MODERATE	OCCASIONAL	Y			66	110	70	170	58	20.06920415	69	83	0.831325301	DVD	13.1	6	69	0.93	188	142	46	125
98	50	M	YES		YES			SEDENTARY	NO				66	120	70	170	80	27.6816609	84	112	0.75	SVD	15.5	6.1	91	1.37	220	118	83	94
99	60	F		YES				SEDENTARY	OCCASIONAL		YES		100	100	70	158	49	19.6282647	67	89	0.752808989	TVD	11.2	6.2	123	0.61	215	149	51	75
100	58	M		YES			YES	SEDENTARY	NO				100	90	60	168	78	27.63605442	79	98	0.806122449	DVD	14.2	5.3	111	1.59	190	130	38	111
101	64	M		YES	YES	YES		SEDENTARY	OCCASIONAL	Y			70	100	60	165	76	27.91551882	84	99	0.848484848	DVD	13.7	6.3	88	1.1	254	182	48	122
102	63	M	YES					MODERATE	OCCASIONAL	Y			82	150	100	169	70	24.50894577	87	96	0.90625	TVD	11.9	5.9	216	1.21	170	90	37	213
103	62	M		YES			YES	SEDENTARY	WEEKLY	Y	Y		95	90	60	167	67	24.02380867	74	97	0.762886598	TVD	13.6	8.1	326	1.62	161	94	31	87
104	42	M	YES					MODERATE	OCCASIONAL		NEWLY DETECTED		114	130	80	165	58	21.30394858	78	98	0.795918367	SVD	15.7	5.5	142	1.03	220	118	83	94
105	59	M	YES				YES	ACTIVE	NO		Y		60	110	70	163	58	21.8299522	75	95	0.789473684	TVD	14.1	9	161	1.01	150	90	30	75
106	44	M		YES				MODERATE	NO	Y			70	140	90	165	58	21.30394858	78	98	0.795918367	SVD	16.3	6.2	190	1.28	190	130	38	111
107	45	F	YES					SEDENTARY	NO	Y	Y		100	190	100	168	70	24.8015873	85	100	0.85	DVD	12.5	10	234	0.54	254	182	48	122
108	55	M		YES				ACTIVE	NO	Y	Y		70	100	70	164	49	18.21832243	67	83	0.807228916	DVD	10.4	9.5	307	0.81	170	90	37	213

109	27	M	YES			YES	YES	ACTIVE	NO				98	130	80	170	84	29.06574394	87	112	0.776785714	SVD	15.6	5.9	82	0.69	210	161	42	110
110	63	M		YES				MODERATE	OCCASIONAL		2		98	120	70	167	82	29.4022733	88	109	0.80733945	DVD	15.8	8	291	1.08	204	126	41	186
111	78	M	YES					SEDENTARY	OCCASIONAL	Y	Y		80	110	60	170	67	23.183391	87	100	0.87	SVD	11.1	7.4	139	1.39	90	32	60	110
112	64	M		YES				SEDENTARY	OCCASIONAL	Y	Y		96	110	70	164	49	18.21832243	68	85	0.8	SVD	10.9	7.3	145	1.25	118	62	42	71
113	58	M		YES				MODERATE	WEEKLY	Y			88	110	70	169	58	20.30741221	84	99	0.848484848	SVD	14.4	11.2	310	0.95	94	29	36	146
114	70	M		YES				SEDENTARY	NO		Y		56	110	70	165	49	17.99816345	68	89	0.764044944	SVD	14.1	8.1	175	1.29	200	150	40	104
115	58	F		YES				SEDENTARY	OCCASIONAL		NEWLY DETECTED		77	80	60	159	56	22.15102251	76	90	0.844444444	TVD	14.5	11.8	229	1.21	325	227	69	147
116	70	M		YES				SEDENTARY	WEEKLY				82	160	90	168	69	24.44727891	80	98	0.816326531	DVD	11.8	5.9	120	0.98	132	75	45	62
117	44	M		YES			YES	SEDENTARY	NO		Y		110	110	80	163	59	22.20633069	76	98	0.775510204	N	15.6	11.5	304	0.6	170	92	32	210
118	65	M		YES			YES	SEDENTARY	NO	Y			102	170	100	169	72	25.20920136	87	102	0.852941176	DVD	16.1	5.9	150	0.79	214	149	55	52
119	70	F	YES					MODERATE	OCCASIONAL	Y	Y		96	110	70	167	78	27.96801606	89	109	0.816513761	SVD	9.6	6.5	121	0.95	159	93	30	85
120	75	F		YES				SEDENTARY	NO	Y	Y		86	110	70	165	75	27.54820937	82	94	0.872340426	SVD	10.9	7.8	175	1.07	133	73	28	158
121	45	F		YES				SEDENTARY	OCCASIONAL		Y		50	100	60	150	48	21.33333333	68	84	0.80952381	SVD	10.2	10	258	0.82	142	90	40	110
122	55	M		YES	YES		YES	MODERATE	NO		NEWLY DETECTED		100	120	70	160	59	23.046875	79	100	0.79	TVD	12.7	11.3	448	1.44	120	72.6	22	127
123	75	F		YES				SEDENTARY	NO		Y		76	120	80	160	72	28.125	82	98	0.836734694	SVD	11.6	12	243	0.42	136	116	28	150
124	73	M		YES				SEDENTARY	NO	Y	Y		81	100	70	160	64	25	74	90	0.822222222	N	10.6	6.8	103	1.71	210	126	36	159
125	63	M		YES	YES	YES		SEDENTARY	NO	Y	Y		80	100	60	160	58	22.65625	74	96	0.770833333	TVD	12.4	11.6	209	1.12	79	38	25	82
126	60	F		YES				ACTIVE	OCCASIONAL	Y			82	110	70	146	43	20.17264027	68	82	0.829268293	SVD	13	6	190	0.96	210	173	34	93
127	57	M		YES				SEDENTARY	WEEKLY	Y			98	120	70	167	56	20.07960128	78	98	0.795918367	DVD	11.5	6.1	85	1.28	200	150	35	90
128	55	M		YES			YES	SEDENTARY	OCCASIONAL				98	130	80	169	79	27.66009594	87	100	0.87	SVD	12.3	5.8	98	1.89	214	139	49	129
129	58	M		YES				MODERATE	OCCASIONAL	Y	Y		80	90	60	163	53	19.94805977	74	97	0.762886598	DVD	12.3	5.7	103	0.96	168	109	42	87
130	42	M		YES	YES		YES	MODERATE	OCCASIONAL		Y		100	130	80	168	78	27.63605442	87	103	0.844660194	DVD	15.3	5.4	104	0.75	121	65	44	59
131	56	M		YES	YES			ACTIVE	NO		Y		92	140	90	160	56	21.875	70	87	0.804597701	DVD	13.4	9.4	259	0.9	214	139	49	129
132	48	M	YES					ACTIVE	NO				92	140	80	163	60	22.58270917	82	98	0.836734694	DVD	13.5	5.7	95	0.91	195	128	40	137
133	54	F	YES					MODERATE	OCCASIONAL		Y		100	130	80	156	60	24.65483235	69	80	0.8625	DVD	13	9.6	312	0.53	151	82	41	138
134	62	M	YES				YES	ACTIVE	NO	Y	Y		80	90	60	159	83	32.83097979	89	106	0.839622642	DVD	15.3	11.5	282	1.09	208	123	56	144
135	80	M		YES				MODERATE	NO	Y			70	100	60	170	75	25.95155709	78	89	0.876404494	DVD	12.1	5.9	101	0.74	200	127	35	190
136	42	M	YES					SEDENTARY	NO				100	90	60	167	64	22.94811574	76	95	0.8	SVD	13.1	5.6	105	0.86	166	89	34	217
137	45	M		YES			YES	MODERATE	OCCASIONAL	Y			102	110	70	170	68	23.52941176	76	98	0.775510204	SVD	13	6	107	0.94	210	173	34	93
138	33	F	YES					SEDENTARY	NO				110	120	70	150	54	24	70	92	0.760869565	SVD	11.8	6.2	84	0.48	208	123	56	144
139	70	F	YES				YES	SEDENTARY	WEEKLY	Y			100	110	80	158	57	22.83287935	69	89	0.775280899	DVD	10.6	6	111	2.12	200	127	35	190
140	65	F	YES					MODERATE	OCCASIONAL				82	160	90	160	68	26.5625	76	98	0.775510204	DVD	12.1	6.3	171	0.78	189	124	33	160
141	47	F	YES				YES	MODERATE	DAILY				94	110	80	160	70	27.34375	82	96	0.854166667	DVD	13.3	5.7	60	0.49	42	12	18	59
142	66	F		YES				SEDENTARY	OCCASIONAL				56	110	80	156	49	20.13477975	74	92	0.804347826	DVD	11.6	6	69	0.77	210	173	34	93
143	76	F		YES				SEDENTARY	NO				82	170	100	164	78	29.00059488	84	110	0.763636364	DVD	11.4	5.5	69	1.06	200	150	35	90
144	39	M	YES					MODERATE	NO	Y			70	140	90	170	68	23.52941176	79	100	0.79	TVD	11.9	5.8	100	0.93	214	139	49	129
145	74	M		YES	YES			MODERATE	NO		NEWLY DETECTED		72	110	60	150	59	26.22222222	72	97	0.742268041	SVD	8	7.1	322	1.48	107	52	42	63
146	36	F		YES				ACTIVE	NO				76	130	90	166	58	21.04804761	80	97	0.824742268	N	8.7	5.7	80	0.64	189	124	33	160
147	38	M	YES		YES			MODERATE	NO				70	110	70	164	52	19.33372992	69	92	0.75	N	9.2	6	103	0.71	42	12	18	59
148	67	M		YES				SEDENTARY	NO				90	110	70	156	42	17.25838264	68	90	0.755555556	TVD	12.5	6.1	124	1.24	210	173	34	93
149	64	M		YES				MODERATE	NO				97	110	70	170	60	20.76124567	76	95	0.8	DVD	6.7	6.2	100	0.76	208	123	56	144
150	53	F		YES			YES	SEDENTARY	NO				82	120	80	165	72	26.44628099	83	104	0.798076923	SVD	13.8	6	131	0.57	200	127	35	190

151	42	M	YES					SEDENTARY	NO				100	100	70	170	59	20.41522491	82	99	0.828282828	SVD	15.2	5.5	88	1.07	189	124	33	160
152	61	F	YES				YES	MODERATE	NO	Y			80	210	110	162	60	22.86236854	79	100	0.79	SVD	12.4	5.1	191	0.96	147	78	53	81
153	38	M		YES				ACTIVE	WEEKLY	Y			100	160	90	170	70	24.22145329	82	100	0.82	N	16.2	8.2	109	0.61	51	20	18	80
154	43	M		YES				ACTIVE	DAILY				72	110	70	150	50	22.22222222	74	96	0.770833333	DVD	14.9	6.1	125	1.15	196	68	26	510
155	64	M		YES				MODERATE	NO	Y	Y		90	110	70	168	62	21.96712018	80	100	0.8	SVD	10.9	7.3	145	1.25	118	62	42	71
156	76	M	YES					ACTIVE	NO				70	110	80	154	48	20.23950076	72	94	0.765957447	SVD	11.9	6.3	149	0.96	200	127	35	190
157	68	M		YES	YES	YES		ACTIVE	NO				60	110	70	169	65	22.75830678	82	103	0.796116505	SVD	11.4	5.9	84	1.23	189	124	33	160
158	56	F		YES				SEDENTARY	NO	Y			74	120	70	150	42	18.66666667	72	93	0.774193548	SVD	12.5	6	87	0.7	147	78	53	81
159	57	M		YES				ACTIVE	NO	Y	Y		80	150	90	160	65	25.390625	86	110	0.781818182	SVD	12.5	8.1	199	0.94	100	67	39	81
160	58	M		YES				MODERATE	OCCASIONAL		NEWLY DETECTED		77	80	60	168	72	25.51020408	80	98	0.816326531	TVD	16.6	5.9	142	0.81	175	117	33	123
161	60	F	YES					SEDENTARY	OCCASIONAL	Y	Y		56	110	70	160	60	23.4375	76	98	0.775510204	SVD	11.5	5.8	87	0.49	162	115	27	102
162	92	M	YES				YES	SEDENTARY	NO	Y			75	190	100	150	45	20	68	93	0.731182796	N	10.3	5.7	76	0.81	210	125	56	144
163	48	M	YES					SEDENTARY	OCCASIONAL	Y	NEWLY DETECTED		88	110	70	160	56	21.875	68	90	0.755555556	SVD	13.1	8.7	211	1.23	162	115	27	102
164	70	M	YES					SEDENTARY	NO		Y		81	110	70	165	49	17.99816345	77	98	0.785714286	TVD	11.3	8	85	1.34	208	123	56	144
165	59	M	YES		YES			MODERATE	OCCASIONAL		Y		76	110	70	170	58	20.06920415	75	98	0.765306122	DVD	12.9	7.1	207	1.15	200	127	35	190
166	60	M		YES	YES	YES		SEDENTARY	NO		Y		90	110	70	169	80	28.01022373	87	106	0.820754717	SVD	14.5	12.4	184	1	189	124	33	160
167	85	M		YES				MODERATE	WEEKLY				50	110	70	166	60	21.77384236	80	94	0.85106383	TVD	12.3	5.9	120	1.16	110	120	24	150
168	54	F		YES			YES	SEDENTARY	OCCASIONAL				130	120	70	158	63	25.23634033	90	96	0.9375	N	10.5	6	98	1.11	163	84	34	223
169	70	F		YES				MODERATE	OCCASIONAL	Y			82	120	70	146	45	21.11090261	74	89	0.831460674	TVD	10.4	6	85	0.89	94	62	35	71
170	62	M	YES					MODERATE	WEEKLY	Y	Y		100	200	100	167	60	21.51385851	76	90	0.844444444	DVD	13.6	9.5	273	1.67	206	146	44	81
171	66	F		YES				SEDENTARY	OCCASIONAL	Y	Y		70	100	60	159	47	18.59103675	74	87	0.850574713	SVD	11.7	6.9	91	0.73	235	180	34	310
172	50	M		YES				SEDENTARY	OCCASIONAL	Y	Y		107	160	90	165	59	21.67125803	72	85	0.847058824	SVD	16.3	11.2	264	1.23	172	87	33	611
173	40	M		YES	YES		YES	SEDENTARY	OCCASIONAL				90	140	90	167	70	25.0995016	79	97	0.81443299	SVD	14.5	6.1	93	1	230	174	27	143
174	70	M	YES					MODERATE	OCCASIONAL				80	100	60	168	56	19.84126984	78	94	0.829787234	SVD	11.4	5.3	93	1.46	311	140	29	156
175	68	F		YES				MODERATE	NO	Y	Y		100	90	60	164	60	22.30814991	78	100	0.78	TVD	10.1	9.9	371	1.16	235	135	34	329
176	77	M		YES				ACTIVE	NO		Y		58	100	60	159	49	19.38214469	68	80	0.85	SVD	8.3	9.4	68	1.31	125	40	34	254
177	38	M		YES	YES	YES		ACTIVE	OCCASIONAL	Y			94	110	70	168	60	21.2585034	72	96	0.75	N	16.5	5.9	116	1.04	82	56	34	98
178	50	M		YES				ACTIVE	NO		Y		80	140	70	163	57	21.45357371	70	81	0.864197531	N	15	11.4	498	1.27	217	147	51	94
179	49	F	YES					MODERATE	NO	YES			60	110	70	160	65	25.390625	79	103	0.766990291	N	12.1	5.7	107	0.49	151	97	42	120
180	50	M	YES					ACTIVE	OCCASIONAL				84	120	70	166	52	18.87066338	68	88	0.772727273	TVD	16	5.6	130	0.81	157	91	47	93
181	39	M	YES			YES		MODERATE	DAILY				100	120	70	166	82	29.75758456	86	110	0.781818182	SVD	13.6	5.9	86	0.76	102	51	29	108
182	51	M		YES				SEDENTARY	WEEKLY	YES	YES		122	130	80	150	48	21.33333333	78	96	0.8125	N	19.2	6.8	70	0.75	95	81	40	100
183	54	F	YES					SEDENTARY	NO	YES			70	120	70	150	50	22.22222222	77	98	0.785714286	TVD	12.7	6	127	0.69	231	156	54	184
184	62	M	YES				YES	MODERATE	DAILY		YES		80	100	70	166	58	21.04804761	78	91	0.857142857	SVD	17.2	6.9	178	1.16	284	202	43	196
185	50	M		YES				MODERATE	OCCASIONAL		Y		80	140	90	168	59	20.90419501	74	92	0.804347826	TVD	13.3	9.5	205	0.9	171	105	29	184
186	47	M		YES	YES			ACTIVE	NO		Y		82	130	80	152	50	21.64127424	76	94	0.808510638	N	12.9	8	159	0.89	231	156	54	184
187	46	M		YES				MODERATE	OCCASIONAL		YES		82	110	70	160	54	21.09375	74	82	0.902439024	SVD	17.4	9.2	422	1.49	284	202	43	196
188	44	F	YES					MODERATE	NO		YES		80	120	70	165	75	27.54820937	90	110	0.818181818	N	14.6	7	136	0.51	171	105	29	184
189	60	F	YES					SEDENTARY	NO				90	110	70	170	60	20.76124567	80	100	0.8	N	15.2	5.9	84	0.94	121	72	37	98
190	25	F		YES				ACTIVE	NO				78	110	80	160	60	23.4375	78	97	0.804123711	SVD	12.8	5.7	83	0.67	280	200	29	180
191	60	M		YES				ACTIVE	NO	YES	YES		80	120	70	170	68	23.52941176	82	97	0.845360825	TVD	13	5.9	238	1.4	231	156	54	184
192	78	M		YES				MODERATE	NO				70	120	76	171	72	24.62296091	79	98	0.806122449	SVD	7.3	6	98	1.33	284	202	43	196
193	28	M	YES			YES	YES	MODERATE	WEEKLY	YES			90	100	70	163	52	19.57168128	76	95	0.8	TVD	10.3	6.2	140	0.86	171	105	29	184

194	54	M		YES				ACTIVE	NO		YES		130	100	60	172	68	22.98539751	78	96	0.8125	TVD	14.1	7.3	107	1.2	225	164	29	158
195	57	M		YES				MODERATE	DAILY		YES		80	110	70	158	49	19.6282647	76	97	0.783505155	SVD	15.5	6.7	135	0.66	213	169	53	80
196	56	F	YES					SEDENTARY	NO				96	112	74	150	49	21.77777778	64	82	0.780487805	N	10.9	5.9	264	0.54	142	96	45	97
197	73	F		YES				ACTIVE	OCCASIONAL		YES		94	130	84	156	48	19.72386588	76	92	0.826086957	DVD	11	10.5	232	0.95	85	67	30	69
198	49	F		YES				SEDENTARY	NO	YES			78	120	80	158	64	25.63691716	76	94	0.808510638	N	14.3	5.8	100	0.82	256	175	47	170
199	44	M		YES				ACTIVE	NO				46	100	62	166	72	26.12861083	79	100	0.79	SVD	11.5	6.1	101	0.61	231	156	54	184
200	42	F		YES				ACTIVE	NO				78	110	72	150	47	20.88888889	67	86	0.779069767	N	12.7	6	80	0.76	284	202	43	196
201	60	M		YES		YES		SEDENTARY	NO	YES			76	156	82	166	78	28.30599506	78	97	0.804123711	DVD	13.8	6.1	230	0.84	171	105	29	184
202	44	F		YES			YES	ACTIVE	NO				50	133	82	162	54	20.57613169	76	94	0.808510638	N	15.8	6	100	1.3	121	72	37	98
203	58	M	YES					MODERATE	NO		YES		60	132	80	158	48	19.22768787	68	91	0.747252747	SVD	14.4	7	142	0.63	280	200	29	180
204	56	F		YES				MODERATE	NO	YES	YES		88	132	88	145	55	26.15933413	70	94	0.744680851	DVD	10.9	6.9	193	1.22	231	156	54	184
205	52	F		YES				SEDENTARY	NO				103	142	86	156	49	20.13477975	70	97	0.721649485	TVD	10.2	6	118	0.55	284	202	43	196
206	81	M		YES				SEDENTARY	OCCASIONAL		Y		94	110	82	158	49	19.6282647	80	98	0.816326531	DVD	14.3	9.6	181	1.06	104	34	56	71
207	41	F		YES			YES	SEDENTARY	WEEKLY				86	132	80	153	65	27.76709812	78	96	0.8125	N	13.8	6	92	0.73	174	94	35	225
208	85	M	YES		YES			SEDENTARY	WEEKLY		Y		68	106	64	160	48	18.75	68	94	0.723404255	TVD	12.5	7.4	368	1.73	67	20	30	85
209	65	M		YES			YES	SEDENTARY	DAILY				62	114	70	160	55	21.484375	70	94	0.744680851	SVD	11.9	5.7	87	1.35	121	58	29	170
210	54	M		YES	YES			MODERATE	OCCASIONAL		YES		84	116	82	160	60	23.4375	74	98	0.755102041	SVD	12.9	12.2	119	0.9	121	72	37	98
211	44	M		YES	YES			MODERATE	NO		YES		82	116	72	170	58	20.06920415	70	96	0.729166667	SVD	9.9	6	66	1.09	280	200	29	180
212	55	M		YES				SEDENTARY	NO		YES		56	100	64	156	82	33.69493754	83	106	0.783018868	DVD	15.9	8.5	58	1.02	231	156	54	184
213	68	F		YES			YES	MODERATE	NO	YES		CVA	94	114	72	154	61	25.72103221	76	98	0.775510204	DVD	13.6	6.4	118	0.6	284	202	43	196
214	60	M		YES	YES			MODERATE	NO		YES		76	100	60	170	52	17.99307958	78	100	0.78	DVD	15.8	10.7	303	1.98	119	70	36	155
215	55	M		YES			YES	SEDENTARY	NO		YES		120	90	60	164	70	26.0261749	76	92	0.826086957	DVD	17.7	7	273	1.39	178	112	37	143
216	65	F		YES				SEDENTARY	NO				82	120	74	154	54	22.76943835	74	96	0.770833333	N	13.3	5.5	97	0.77	144	78	56	52
217	91	M	YES					ACTIVE	OCCASIONAL				60	110	72	158	48	19.22768787	70	97	0.721649485	N	12.5	6.1	97	1.4	131	84	21	131
218	48	F		YES				SEDENTARY	OCCASIONAL				80	114	72	165	72	26.44628099	78	96	0.8125	N	12.9	6	65	0.6	176	101	41	169
219	50	F		YES				SEDENTARY	OCCASIONAL	YES			80	106	72	168	60	21.2585034	76	94	0.808510638	N	10.6	5.8	98	0.58	155	82	57	78
220	38	M		YES	YES	YES	YES	MODERATE	WEEKLY		YES		78	130	82	170	58	20.06920415	72	98	0.734693878	N	16.2	8.2	109	0.61	146	76	29	206
221	60	F		YES				MODERATE	OCCASIONAL		NEWLY DETECTED		82	132	86	142	80	39.67466772	74	90	0.822222222	N	8.6	6.6	91	0.68	149	83	50	81
222	60	M		YES				MODERATE	NO				72	124	80	170	62	21.4532872	74	100	0.74	TVD	13.2	6.4	127	1.31	185	103	48	168
223	71	M		YES				MODERATE	NO				72	110	82	156	42	17.25838264	74	90	0.822222222	N	13.4	6	88	0.91	174	94	35	225
224	52	M		YES	YES		YES	MODERATE	NO				94	124	76	150	50	22.22222222	68	90	0.755555556	SVD	17	5.5	176	0.66	144	78	56	52
225	80	F	YES					ACTIVE	DAILY		NEWLY DETECTED		54	90	60	152	51	22.07409972	73	91	0.802197802	N	11.4	6.9	146	1.41	131	84	21	131
226	55	M		YES				SEDENTARY	DAILY		YES		86	101	88	175	75	24.48979592	82	101	0.811881188	SVD	11.9	14.6	496	0.93	176	101	41	169
227	49	F		YES				SEDENTARY	OCCASIONAL				74	100	72	148	50	22.82688093	68	90	0.755555556	N	11.1	6	81	0.87	117	37	32	241
228	43	F	YES				YES	MODERATE	OCCASIONAL	YES			70	160	90	171	76	25.99090318	86	110	0.781818182	N	14.2	6.1	109	0.79	158	64	54	202
229	46	F		YES			YES	MODERATE	OCCASIONAL	YES			84	100	66	145	40	19.02497027	70	92	0.760869565	N	11.7	5.5	132	0.65	161	109	39	90
230	67	M		YES				SEDENTARY	NO	YES	YES		76	130	74	165	60	22.03856749	80	96	0.833333333	SVD	11.3	6	86	1.37	146	82	56	132
231	55	F		YES				SEDENTARY	NO	YES			84	142	88	150	42	18.66666667	74	91	0.813186813	TVD	12.2	5.9	188	1.02	95	81	40	100
232	32	F		YES				MODERATE	NO				90	110	72	160	50	19.53125	78	96	0.8125	N	14.1	5.7	108	0.68	231	156	54	184
233	40	F		YES				SEDENTARY	NO	YES	YES		74	110	70	154	76	32.0458762	82	100	0.82	SVD	12.5	6	366	0.58	284	202	43	196
234	64	F		YES			YES	ACTIVE	NO	YES			96	142	74	146	50	23.45655845	76	90	0.844444444	DVD	6.4	6.1	99	0.6	171	105	29	184
235	60	F		YES			YES	SEDENTARY	NO				98	160	90	163	81	30.48665738	88	110	0.8	TVD	13.1	5.6	173	0.64	174	94	35	225
236	48	M		YES				MODERATE	NO	YES			90	130	84	165	42	15.42699725	74	97	0.762886598	DVD	13.3	5.7	214	0.59	127	52	61	69

237	70	M	YES					SEDENTARY	NO	YES			92	120	76	146	45	21.11090261	78	80	0.975	TVD	10.4	5.1	85	0.89	198	142	33	117
238	75	M	YES					MODERATE	OCCASIONAL				90	160	92	158	64	25.63691716	86	95	0.905263158	N	11.6	5.3	78	1.3	170	104	54	61
239	65	F		YES				MODERATE	OCCASIONAL				56	132	90	160	56	21.875	76	86	0.88372093	N	12	6	92	0.95	116	67	32	76
240	58	M	YES					SEDENTARY	OCCASIONAL				80	122	80	169	47	16.45600644	65	76	0.855263158	N	12.9	5.2	87	0.91	101	48	33	99
241	75	F		YES				SEDENTARY	OCCASIONAL				86	100	86	162	53	20.19509221	72	80	0.9	N	12.3	5.9	83	1.04	131	84	21	131
242	65	M	YES					SEDENTARY	NO		YES	PVD	68	110	82	165	58	21.30394858	70	87	0.804597701	SVD	11.7	6.1	102	1.56	176	101	41	169
243	54	F	YES				YES	MODERATE	WEEKLY		YES		80	110	68	157	46	18.66201469	72	80	0.9	SVD	13.5	12.6	65	0.46	155	82	57	78
244	34	M		YES		YES	YES	SEDENTARY	NO			HYPERHOMO CYSTINEMIA + DVT	86	100	74	178	92	29.03673779	106	118	0.898305085	SVD	16.7	6	116	0.93	146	76	29	206
245	55	M		YES		YES		SEDENTARY	DAILY		YES		80	124	76	170	86	29.75778547	100	108	0.925925926	SVD	15.9	8.5	58	1.02	210	180	42	96
246	68	M		YES		YES		ACTIVE	NO		YES		88	100	60	157	51	20.69049454	70	92	0.760869565	TVD	13.2	9.2	100	1.04	102	69	29	80
247	70	M	YES					SEDENTARY	OCCASIONAL				74	100	60	165	63	23.14049587	89	99	0.898989899	SVD	11.3	6.1	124	1.06	151	83	43	124
248	60	M		YES				ACTIVE	NO	YES			98	124	82	161	70	27.00513097	84	90	0.933333333	N	15.1	5.9	76	1.11	112	104	46	90
249	63	M	YES					SEDENTARY	OCCASIONAL	YES			98	130	84	169	80	28.01022373	89	102	0.87254902	N	14.7	5.8	182	1.03	151	79	57	75
250	49	F	YES					SEDENTARY	OCCASIONAL				86	130	80	150	45	20	75	91	0.824175824	N	12	6.2	90	0.57	125	63	41	107
251	50	M		YES		YES	YES	MODERATE	DAILY				76	110	70	160	42	16.40625	78	100	0.78	DVD	18.7	5.3	134	0.88	251	156	81	70
252	66	F		YES				SEDENTARY	OCCASIONAL	YES	YES		74	170	90	160	90	35.15625	98	120	0.816666667	N	12.3	7.9	177	1.03	201	129	32	199
253	58	M		YES		YES	YES	MODERATE	DAILY		YES		80	100	80	170	70	24.22145329	89	98	0.908163265	DVD	16.2	7.6	256	0.73	90	81	40	86
254	55	F	YES					SEDENTARY	NO	YES			70	170	100	166	50	18.14486863	78	96	0.8125	SVD	11.1	6.3	123	0.7	150	183	19	112
255	46	M	YES				YES	ACTIVE	NO				78	100	70	164	48	17.84651993	87	99	0.878787879	N	12.3	5.9	98	0.82	125	95	34	51
256	50	M		YES				SEDENTARY	NO				80	130	80	166	58	21.04804761	88	100	0.88	SVD	15	6	96	0.83	117	37	32	241
257	70	M		YES			YES	SEDENTARY	NO	YES	YES		90	110	74	164	58	21.56454491	78	92	0.847826087	SVD	10.8	5.5	145	1.25	158	64	54	202
258	76	F		YES				SEDENTARY	NO				50	160	92	165	80	29.38475666	94	110	0.854545455	TVD	12.3	5.7	63	0.98	102	120	30	87
259	64	M		YES	YES		YES	ACTIVE	NO	YES			53	144	90	165	62	22.77318641	86	100	0.86	DVD	12.2	7.2	312	1.26	246	121	43	194
260	33	M		YES	YES	YES		MODERATE	NO				84	136	80	170	72	24.91349481	80	96	0.833333333	N	15.3	6	61	0.88	95	81	40	100
261	68	M		YES				MODERATE	DAILY				82	120	74	163	76	28.60476495	77	98	0.785714286	DVD	13.3	6.2	120	0.8	231	156	54	184
262	65	F		YES				SEDENTARY	OCCASIONAL	YES			83	120	84	147	62	28.69174881	80	97	0.824742268	DVD	13.8	6	99	1.14	284	202	43	196
263	46	M		YES	YES			SEDENTARY	WEEKLY				78	136	84	156	55	22.60026298	75	98	0.765306122	DVD	14.3	6.2	87	0.19	171	105	29	184
264	50	F	YES				YES	MODERATE	OCCASIONAL	YES		HBsAg	84	110	82	159	48	18.98659072	65	90	0.722222222	SVD	12.7	6.2	92	0.56	117	37	32	241
265	60	F		YES				SEDENTARY	OCCASIONAL			BRONCHIAL ASHTMA	72	114	80	152	46	19.9099723	68	90	0.755555556	N	11.4	6.2	84	0.57	158	64	54	202
266	52	M		YES	YES	YES		SEDENTARY	OCCASIONAL				70	110	70	159	58	22.94213045	75	89	0.842696629	N	14.6	6.1	76	0.8	89	46	24	133
267	57	M		YES				ACTIVE	DAILY				80	110	80	170	58	20.06920415	75	96	0.78125	DVD	13.6	6	240	0.88	117	57	31	143
268	55	M	YES				YES	MODERATE	WEEKLY				70	130	80	168	65	23.03004535	88	109	0.80733945	N	12.4	5.9	81	1.01	95	81	40	100
269	68	M		YES		YES		SEDENTARY	DAILY	YES			78	110	80	165	68	24.97704316	86	103	0.834951456	DVD	11.5	5.9	101	0.89	231	156	54	184
270	59	M		YES		YES		SEDENTARY	WEEKLY	YES			70	100	70	160	73	28.515625	80	100	0.8	DVD	15.5	6	140	0.87	284	202	43	196
271	55	M	YES					SEDENTARY	NO				84	100	60	156	56	23.01117686	70	93	0.752688172	N	13.7	5.9	84	0.67	171	105	29	184
272	57	M		YES				ACTIVE	NO				80	130	80	169	71	24.85907356	86	104	0.826923077	DVD	15.3	6	241	0.95	117	37	32	241
273	54	F		YES			YES	SEDENTARY	NO	YES			80	140	90	154	58	24.45606342	78	98	0.795918367	N	14.5	6.4	158	0.74	158	64	54	202
274	63	F		YES				SEDENTARY	OCCASIONAL		YES		88	100	60	153	49	20.93212012	72	98	0.734693878	SVD	12.7	10	233	0.69	89	46	24	133
275	68	M		YES			YES	SEDENTARY	OCCASIONAL				80	120	70	160	62	24.21875	78	94	0.829787234	DVD	13.3	6	89	1.12	120	98	50	87
276	36	M		YES	YES	YES	YES	SEDENTARY	NO				82	120	82	160	79	30.859375	82	92	0.891304348	DVD	11.9	5.4	100	1.1	136	60	35	203
277	73	F	YES					SEDENTARY	NO	YES			72	130	80	168	50	17.7154195	98	106	0.924528302	TVD	13.1	6.8	167	0.94	131	25	31	377
278	64	M	YES					SEDENTARY	NO		YES		84	122	74	170	80	27.6816609	86	112	0.767857143	DVD	13.6	6.9	151	1.48	177	85	62	149

279	50	M		YES				SEDENTARY	NO				90	110	70	165	72	26.44628099	76	95	0.8	N	12.8	6	112	1.27	182	107	36	194
280	56	F	YES					SEDENTARY	NO	YES	YES		90	110	74	145	54	25.68370987	70	84	0.833333333	N	10.7	6.7	155	0.77	117	37	32	241
281	57	M		YES		YES	YES	ACTIVE	NO				110	100	74	172	74	25.01352082	84	92	0.913043478	N	12	5.6	82	0.77	158	64	54	202
282	43	F	YES					SEDENTARY	NO		YES		80	150	100	145	34	16.17122473	68	82	0.829268293	SVD	12.3	11.5	183	1.12	101	48	33	99
283	60	F	YES				YES	SEDENTARY	NO				90	100	60	160	52	20.3125	74	94	0.787234043	DVD	12.7	6	119	0.77	224	158	39	133
284	66	M	YES					ACTIVE	NO	YES	YES		68	116	80	170	65	22.49134948	74	98	0.755102041	SVD	15.9	6.6	104	0.73	150	190	39	150
285	68	M		YES	YES		YES	SEDENTARY	NO		NEWLY DETECTED	COPD	80	88	60	165	58	21.30394858	76	98	0.775510204	TVD	12.9	8.5	174	1.5	121	140	29	180
286	80	M		YES			YES	ACTIVE	NO				78	124	70	170	52	17.99307958	76	98	0.775510204	TVD	9.4	5.8	110	1.53	100	67	39	69
287	73	M	YES					SEDENTARY	NO	YES	YES		90	130	80	170	75	25.95155709	82	110	0.745454545	TVD	14	11.4	364	1.31	185	116	39	151
288	47	M		YES				SEDENTARY	NO				72	120	86	170	65	22.49134948	76	94	0.808510638	SVD	14.4	5.8	127	0.97	204	142	38	121
289	68	M			YES		YES	ACTIVE	NO	YES			94	120	56	169	73	25.55932916	90	110	0.818181818	DVD	13.4	6.3	121	0.95	183	113	46	119
290	75	F	YES					SEDENTARY	NO			PTB ON AKT	74	130	80	155	41	17.06555671	74	92	0.804347826	SVD	14.3	5.9	135	0.79	151	89	47	96
291	63	M	YES					ACTIVE	YES	YES			70	130	84	164	80	29.74419988	88	114	0.771929825	N	14.9	5.7	89	1.12	104	98	36	98
292	52	F	YES					SEDENTARY	NO			COPD	110	100	74	170	64	22.14532872	81	98	0.826530612	DVD	14.4	12.9	601	0.63	177	85	62	149
293	54	M		YES	YES	YES	YES	ACTIVE	NO	YES	YES		52	100	70	167	63	22.58955144	78	100	0.78	TVD	10.5	8.9	266	3.43	182	107	36	194
294	60	M		YES				ACTIVE	YES	YES		ASTHMA	74	100	70	150	70	31.11111111	82	104	0.788461538	DVD	11.1	6	183	0.91	235	148	64	117
295	65	M		YES				ACTIVE	OCCASIONAL				72	100	70	152	54	23.37257618	79	90	0.877777778	SVD	13.5	6.1	76	0.91	116	67	32	76
296	45	M		YES		YES		ACTIVE	NO			EPILEPSY	90	100	66	177	60	19.15158479	74	92	0.804347826	N	14.5	5.9	109	0.83	101	48	33	99
297	60	F		YES			YES	SEDENTARY	NO	YES			120	130	94	158	60	24.03460984	82	94	0.872340426	DVD	13.8	6	230	0.84	140	73	42	127
298	70	M		YES				MODERATE	NO	YES	YES		106	170	94	166	80	29.03178981	84	110	0.763636364	SVD	11.1	13	304	1.7	138	65	36	185
299	57	M	YES					SEDENTARY	NO				78	150	90	158	58	23.23345618	88	96	0.916666667	SVD	15.5	6.1	135	0.66	213	169	53	80
300	60	M		YES			YES	SEDENTARY	NO	YES		COPD	60	132	88	171	76	25.99090318	92	110	0.836363636	DVD	15.2	5.8	96	1.46	214	108	39	337
301	55	F	YES					ACTIVE	OCCASIONAL	YES			68	160	100	149	45	20.26935724	78	90	0.866666667	SVD	11.1	6	123	0.7	127	52	61	69
302	73	M		YES				ACTIVE	NO		YES		78	90	60	167	58	20.79672989	78	86	0.906976744	SVD	14.5	7	157	1.14	113	65	23	208
303	65	M		YES			YES	MODERATE	NO				114	130	80	167	59	21.1552942	79	101	0.782178218	SVD	11.1	6.3	183	0.91	235	148	64	117
304	48	M		YES	YES	YES		MODERATE	NO	YES	YES		70	100	70	162	60	22.86236854	80	97	0.824742268	DVD	15.5	5.2	143	0.98	154	94	42	90
305	60	M		YES			YES	MODERATE	NO				136	106	70	170	59	20.41522491	81	105	0.771428571	DVD	15.6	6.3	107	0.95	102	54	36	50
306	48	M	YES				YES	ACTIVE	OCCASIONAL	YES			88	120	70	152	45	19.47714681	67	91	0.736263736	TVD	13.7	6	98	0.99	127	52	61	69
307	50	M	YES				YES	SEDENTARY	NO		YES		100	100	70	160	60	23.4375	72	98	0.734693878	TVD	15.1	11	355	0.89	198	142	33	117
308	57	F	YES					SEDENTARY	NO	YES			60	130	80	156	71	29.17488494	89	111	0.801801802	SVD	14	6.1	164	0.64	170	104	54	61
309	35	F		YES				ACTIVE	NO				90	110	72	158	58	23.23345618	80	96	0.833333333	N	12.7	5.9	100	0.5	116	67	32	76
310	60	F	YES					SEDENTARY	NO	YES			100	160	90	145	55	26.15933413	80	92	0.869565217	DVD	12.8	5.4	102	0.44	101	48	33	99
311	56	F		YES			YES	SEDENTARY	NO		YES		80	120	80	162	58	22.10028959	78	97	0.804123711	TVD	9.8	11.7	196	0.68	140	73	42	127
312	75	M	YES				YES	ACTIVE	NO		YES		122	110	70	168	61	21.61281179	76	94	0.808510638	SVD	11.4	9.1	154	0.77	181	105	35	206
313	60	F	YES					ACTIVE	NO	YES			54	120	80	152	56	24.23822715	86	94	0.914893617	N	12.1	5.7	62	0.73	127	52	61	69
314	58	F		YES				SEDENTARY	DAILY	YES			94	150	94	158	80	32.04614645	90	110	0.818181818	N	12	5.7	100	1.1	145	75	58	59
315	70	M		YES	YES			ACTIVE	NO		YES	PARKINSONISM	86	130	90	162	70	26.6727633	92	104	0.884615385	TVD	13.1	7	160	1.28	174	119	28	136
316	26	M	YES				YES	SEDENTARY	NO				100	110	80	157	42	17.0392308	74	96	0.770833333	N	9.1	5.8	85	1.13	250	180	41	140
317	59	F	YES					MODERATE	OCCASIONAL		YES		94	90	60	156	46	18.90203813	69	90	0.766666667	N	12.8	11.7	284	0.65	181	105	35	206
318	67	M	YES		YES			ACTIVE	DAILY				88	130	76	165	60	22.03856749	78	86	0.906976744	SVD	15.9	6	83	0.82	127	52	61	69
319	72	M		YES				SEDENTARY	NO				72	100	60	168	54	19.13265306	88	108	0.814814815	SVD	11.2	4.7	118	0.83	145	75	58	59
320	65	M		YES	YES			MODERATE	OCCASIONAL	YES			70	132	76	152	92	39.8199446	104	116	0.896551724	SVD	15	5.9	119	0.79	174	119	28	136
321	60	M	YES				YES	ACTIVE	OCCASIONAL		YES	COPD	76	100	60	170	78	26.98961938	86	98	0.87755102	TVD	15.8	10.7	303	1.98	119	70	36	155

322	72	F		YES			YES	SEDENTARY	NO	YES	YES		87	110	70	159	60	23.7332384	78	96	0.8125	TVD	11.5	9.2	187	1.06	125	78	34	65
323	52	M	YES					MODERATE	NO	YES			95	90	60	163	65	24.4646016	82	104	0.788461538	SVD	16.2	6	102	0.75	140	102	30	142
324	41	M		YES	YES			MODERATE	NO				76	110	72	150	45	20	71	92	0.77173913	SVD	14.9	6	86	0.89	250	182	40	141
325	61	M	YES			YES		MODERATE	NO				80	110	76	158	65	26.03749399	72	90	0.8	TVD	14.2	5.6	83	0.94	151	86	30	176
326	73	M		YES				MODERATE	NO				70	140	80	165	66	24.24242424	91	97	0.93814433	SVD	14.3	5.2	85	1.15	116	67	32	76
327	76	M	YES					SEDENTARY	OCCASIONAL				110	132	80	175	65	21.2244898	100	106	0.943396226	DVD	16.1	6	103	1.05	101	48	33	99
328	62	M	YES					MODERATE	NO		YES		100	118	76	150	69	30.66666667	80	96	0.833333333	N	10.2	6.7	164	0.77	136	40	37	297
329	58	M	YES			YES	YES	MODERATE	OCCASIONAL	YES			64	110	86	163	74	27.85200798	90	112	0.803571429	DVD	13.5	6.5	172	1.16	131	56	44	155
330	46	F	YES					SEDENTARY	NO				62	100	60	153	41	17.51463112	68	72	0.944444444	N	8.4	5.5	79	0.69	235	200	28	180
331	58	M		YES				MODERATE	DAILY	YES			92	120	70	164	61	22.67995241	96	104	0.923076923	TVD	13.1	6	108	0.82	152	75	38	197
332	64	M		YES				SEDENTARY	NO	YES	YES		80	100	50	155	51	21.22788762	80	86	0.930232558	TVD	11.6	10.9	108	0.75	129	49	37	217
333	38	M	YES			YES		MODERATAE	DAILY				94	100	72	163	74	27.85200798	72	76	0.947368421	N	14.3	6.1	120	0.66	327	219	46	310
334	19	M		YES				SEDENTARY	NO		YES	FAMILIAL HYPERCHOLO STEREMIA	80	120	70	162	49	18.67093431	70	84	0.833333333	N	12.8	7	81	0.66	361	327	24	52
335	75	M		YES				SEDENTARY	OCCASIONAL	YES			60	110	70	158	65	26.03749399	78	92	0.847826087	DVD	11.5	6.2	71	1	120	107	34	180
336	26	M	YES				YES	SEDENTARY	NO				80	122	86	164	72	26.76977989	78	96	0.8125	SVD	15.6	5.9	77	0.86	167	110	41	78
337	42	M		YES				MODERATE	NO				80	100	80	178	71	22.40878677	79	98	0.806122449	SVD	13.7	6	73	0.9	124	150	60	95
338	50	M	YES					MODERATE	NO				80	110	70	170	58	20.06920415	72	98	0.734693878	SVD	12.7	5.8	181	0.78	122	67	31	121
339	49	F		YES				SEDENTARY	NO		YES		74	110	88	158	64	25.63691716	78	98	0.795918367	N	12.8	5.5	152	0.73	155	180	30	120
340	70	F		YES				SEDENTARY	NO	YES			86	120	70	146	45	21.11090261	78	98	0.795918367	TVD	10.4	6.1	85	0.89	210	120	39	150
341	55	M	YES					MODERATE	NO	YES			88	130	88	150	54	24	78	92	0.847826087	DVD	15.2	6	105	0.87	95	28	36	155
342	76	M	YES					SEDENTARY	DAILY	YES			100	100	60	170	83	28.71972318	84	112	0.75	SVD	13.1	5.5	208	1.04	120	102	39	80
343	37	F		YES		YES		MODERATE	OCCASIONAL				110	110	70	165	63	23.14049587	73	97	0.75257732	SVD	15.5	5.7	131	0.93	159	106	34	97
344	65	M	YES			YES		MODERATE	NO				108	124	72	167	55	19.72103697	75	98	0.765306122	SVD	12	5.8	103	0.8	210	140	36	180
345	60	M	YES					ACTIVE	DAILY	YES	YES		80	156	90	145	54	25.68370987	69	88	0.784090909	DVD	14.2	10.8	365	1.06	172	96	33	215
346	54	F	YES				YES	SEDENTARY	OCCASIONAL		YES		106	120	70	152	58	25.10387812	77	95	0.810526316	DVD	13.5	12.6	65	0.46	155	82	57	70
347	60	F		YES				MODERATE	NO		YES	TB ON AKT	80	90	66	161	76	29.31985649	86	112	0.767857143	SVD	11.3	11.4	590	0.75	219	129	63	133
348	75	M	YES		YES	YES		MODERATE	NO		YES		75	140	80	162	60	22.86236854	83	108	0.768518519	SVD	17.9	10.2	435	1.33	212	142	49	105
349	60	M		YES				SEDENTARY	OCCASIONAL	YES			86	120	70	169	59	20.65754	80	100	0.8	SVD	12.2	5.9	100	0.66	215	200	29	180
350	70	F		YES				ACTIVE	OCCASIONAL	YES		COPD	150	156	90	166	59	21.41094498	78	96	0.8125	TVD	10.4	5.8	87	1.05	105	90	37	80
351	72	F		YES				SEDENTARY	DAILY		YES		52	90	66	148	42	19.17457999	86	98	0.87755102	TVD	10.2	6.8	401	1.38	64	50	11	17
352	64	M		YES	YES		YES	ACTIVE	DAILY	YES	NEWLY DETECTED		90	120	70	170	53	18.33910035	77	100	0.77	SVD	12.3	8.3	80	1.3	160	110	39	90
353	85	M		YES				MODERATE	NO	YES	YES		80	124	76	172	86	29.06976744	84	110	0.763636364	SVD	13.6	10	114	0.99	122	67	31	121
354	42	M	YES		YES		YES	MODERATE	NO				68	110	70	156	42	17.25838264	70	86	0.813953488	SVD	11.2	5.9	97	1.38	155	180	30	120
355	55	F		YES				SEDENTARY	NO				70	122	70	162	74	28.1969212	80	102	0.784313725	DVD	10.9	6.1	192	0.73	210	120	39	150
356	46	M		YES				ACTIVE	NO		YES		70	130	90	145	64	30.43995244	76	98	0.775510204	SVD	15.4	10.3	114	0.72	162	78	24	106
357	40	M		YES			YES	ACTIVE	NO	YES			80	120	80	165	66	24.24242424	76	102	0.745098039	DVD	14.7	5.7	94	1.08	140	98	28	118
358	48	M		YES				SEDENTARY	NO	YES	YES		82	150	90	164	90	33.46222487	92	104	0.884615385	SVD	13.2	11.4	342	0.61	128	79	30	93
359	70	F		YES				SEDENTARY	NO	YES	YES		122	130	80	150	48	21.33333333	78	96	0.8125	N	12.6	6.9	230	0.77	180	90	41	89
360	67	M		YES				SEDENTARY	NO	YES	YES		68	140	70	158	67	26.83864765	84	96	0.875	SVD	13.5	7.1	104	0.96	148	60	57	153
361	85	F		YES				SEDENTARY	NO	YES			100	120	80	165	64	23.50780533	76	98	0.775510204	DVD	11.4	6.2	88	0.51	230	79	29	190
362	54	M		YES	YES	YES	YES	SEDENTARY	NO	YES	NEWLY DETECTED		70	210	120	162	54	20.57613169	75	95	0.789473684	TVD	11.5	9.1	300	1.31	310	180	35	180

363	60	M		YES	YES			ACTIVE	OCCASIONAL		YES		110	140	90	166	60	21.77384236	72	90	0.8	SVD	12	7.8	100	0.8	87	92	39	84
364	88	M		YES				SEDENTARY	NO	YES	YES		130	160	100	163	59	22.20633069	80	102	0.784313725	SVD	10	9.4	283	0.67	120	141	28	98
365	80	M		YES				SEDENTARY	DAILY	YES			72	120	80	167	67	24.02380867	86	98	0.87755102	DVD	6.1	6	124	0.92	166	100	36	95
366	46	M		YES	YES		YES	ACTIVE	DAILY			HBsAg	80	130	80	164	71	26.39797739	82	100	0.82	SVD	15.4	5.8	76	0.84	190	150	29	180
367	54	M	YES		YES			SEDENTARY	OCCASIONAL				44	70	67	170	70	24.22145329	76	98	0.775510204	SVD	13.7	5.9	108	0.64	162	107	42	64
368	70	M		YES				SEDENTARY	WEEKLY		YES		100	80	60	165	65	23.87511478	78	99	0.787878788	SVD	11.1	8.5	256	1.22	90	120	34	97
369	68	M		YES			YES	SEDENTARY	NO	YES			82	120	80	166	72	26.12861083	85	110	0.772727273	SVD	11.2	6.1	177	1	147	93	39	77
370	55	M		YES	YES			SEDENTARY	NO				84	170	100	165	52	19.10009183	72	91	0.791208791	N	12.7	5.5	125	1.13	180	152	39	69
371	65	M		YES	YES		YES	MODERATE	NO				94	200	110	158	42	16.82422689	88	90	0.977777778	SVD	13.9	6	114	1.03	193	112	69	61
372	50	M		YES	YES			MODERATE	OCCASIONAL	YES		OLD CVA	86	100	70	158	42	16.82422689	88	90	0.977777778	DVD	13.1	5.7	140	0.99	242	172	43	136
373	69	M		YES				MODERATE	NO				130	90	60	160	70	27.34375	80	98	0.816326531	SVD	11.3	5.8	105	1.17	101	35	57	45
374	53	M		YES			YES	MODERATE	DAILY		NEWLY DETECTED		60	130	80	170	70	24.22145329	74	98	0.755102041	SVD	13.6	13.2	382	1.7	184	106	44	171
375	72	F	YES					ACTIVE	NO				100	180	90	158	42	16.82422689	67	90	0.744444444	SVD	10.4	6.1	155	1.43	136	76	37	113
376	70	M		YES				ACTIVE	OCCASIONAL		YES		58	90	60	160	45	17.578125	65	85	0.764705882	SVD	14.9	9	251	1.18	188	108	30	252
377	51	M		YES				SEDENTARY	NO	YES			88	200	100	164	54	20.07733492	70	90	0.777777778	SVD	15.6	5.7	323	0.78	168	118	34	70
378	33	M	YES		YES			ACTIVE	DAILY				88	90	60	150	45	20	70	100	0.7	SVD	15.5	5.6	99	1.39	78	67	36	65
379	65	M	YES		YES		YES	MODERATE	OCCASIONAL				74	110	70	164	52	19.33372992	74	98	0.755102041	DVD	14.4	5.8	103	0.91	151	99	30	109
380	62	M		YES				SEDENTARY	NO				74	120	70	164	54	20.07733492	75	98	0.765306122	SVD	11.6	5.9	106	0.83	211	131	66	68
381	58	M		YES				MODERATE	WEEKLY				80	110	70	170	58	20.06920415	76	95	0.8	DVD	15.1	5.8	87	0.78	183	94	29	91
382	43	M		YES				MODERATE	NO	YES	YES		68	140	80	160	52	20.3125	86	99	0.868686869	DVD	13	9	213	0.86	152	235	35	180
383	65	F		YES				ACTIVE	NO		YES		120	130	90	156	50	20.54569362	65	85	0.764705882	SVD	9.9	6.6	137	1.79	141	200	37	190
384	60	M	YES					SEDENTARY	NO		YES		84	140	90	166	58	21.04804761	69	88	0.784090909	SVD	14.8	10.3	325	0.83	212	138	38	181
385	50	F	YES		YES		YES	ACTIVE	OCCASIONAL	YES	NEWLY DETECTED		127	150	90	170	70	24.22145329	78	104	0.75	TVD	14	8.3	126	0.6	22	144	36	209
386	61	M	YES					ACTIVE	NO		YES		104	160	120	166	53	19.23356075	70	95	0.736842105	SVD	12.7	9.1	351	1.3	118	67	35	81
387	54	F	YES					MODERATE	NO		YES		105	130	90	170	70	24.22145329	74	100	0.74	DVD	13.5	12.6	65	0.46	155	82	57	78
388	88	M	YES					SEDENTARY	NO		YES		88	130	96	158	45	18.02595738	65	79	0.82278481	SVD	10	9.4	283	0.67	120	122	30	95
389	61	M	YES					ACTIVE	NO				68	130	90	158	58	23.23345618	65	79	0.82278481	SVD	12.4	6	191	0.96	147	78	53	81
390	80	F		YES			YES	SEDENTARY	NO	YES		PULM KOCHS	50	120	80	162	70	26.6727633	73	98	0.744897959	DVD	11.4	6.9	146	1.41	131	84	21	131
391	52	M	YES		YES			ACTIVE	DAILY	YES			92	110	74	161	52	20.06095444	69	93	0.741935484	SVD	17	5.5	176	0.66	144	78	56	52
392	76	M	YES					SEDENTARY	NO				84	140	90	166	58	21.04804761	69	88	0.784090909	SVD	14.4	5.5	82	1.05	140	84	38	98
393	56	F		YES			YES	ACTIVE	NO	YES			126	150	90	170	70	24.22145329	78	104	0.75	TVD	11.8	5	93	0.66	187	114	54	95
394	37	M	YES					ACTIVE	NO				86	110	70	158	55	22.03172568	63	93	0.677419355	SVD	15.3	5.8	131	0.93	159	106	34	97
395	48	M		YES				ACTIVE	OCCASIONAL		YES		80	140	80	170	68	23.52941176	82	98	0.836734694	TVD	11.5	9.8	584	1.14	92	40	41	161
396	66	M		YES				MODERATE	NO	YES	NEWLY DETECTED		94	100	80	165	58	21.30394858	76	94	0.808510638	TVD	12.6	8.2	102	0.69	227	163	35	144
397	78	M		YES			YES	SEDENTARY	NO		YES		58	100	60	174	80	26.42356982	89	114	0.780701754	SVD	9.9	8.6	422	1.46	164	105	38	103
398	70	M		YES				SEDENTARY	NO	YES	YES		100	200	110	165	74	27.18089991	85	106	0.801886792	DVD	15.5	10.2	207	1.17	149	98	33	141
399	68	M		YES			YES	MODERATE	OCCASIONAL	YES			150	150	100	168	70	24.8015873	75	91	0.824175824	DVD	12.6	4.9	65	1.56	100	78	32	90
400	56	F		YES				ACTIVE	DAILY		NEWLY DETECTED		88	100	60	164	60	22.30814991	79	99	0.797979798	N	13.3	6.7	210	1.02	196	134	26	180
401	85	F	YES					SEDENTARY	NO	YES	YES		70	100	60	160	58	22.65625	74	86	0.860465116	SVD	8.3	7.4	164	1.13	126	90	31	180
402	82	F	YES				YES	SEDENTARY	OCCASIONAL	YES			107	160	90	156	45	18.49112426	69	80	0.8625	SVD	11.8	5.6	130	0.86	144	84	38	95
403	59	F	YES					MODERATE	NO		YES		90	140	90	163	73	27.47562949	82	102	0.803921569	SVD	8.4	7.6	200	0.52	218	141	33	220

404	60	M	YES					MODERATE	NO				80	100	60	165	68	24.97704316	78	95	0.821052632	SVD	13.2	6.4	127	1.31	185	103	48	168
405	59	F		YES				ACTIVE	DAILY		YES		110	130	90	160	60	23.4375	74	92	0.804347826	N	10.9	6.9	94	0.5	159	106	34	97
406	45	M		YES	YES		YES	SEDENTARY	OCCASIONAL	YES			70	130	80	160	68	26.5625	85	98	0.867346939	N	12	5.9	81	4.4	92	40	41	161
407	44	F	YES					MODERATE	NO				120	100	70	150	42	18.66666667	72	93	0.774193548	N	14.2	6	189	0.61	227	163	35	144
408	32	M		YES				MODERATE	NO				54	130	80	166	64	23.22543185	74	98	0.755102041	N	14.6	5.4	91	0.89	164	105	38	103
409	49	F	YES				YES	MODERATE	NO				58	110	70	160	62	24.21875	74	96	0.770833333	N	12.5	5.2	100	0.77	121	98	35	136
410	46	F		YES			YES	SEDENTARY	NO				90	120	80	160	80	31.25	82	106	0.773584906	SVD	8.1	6	257	0.55	99	58	35	29
411	48	M	YES					MODERATE	NO				72	110	80	170	80	27.6816609	82	101	0.811881188	SVD	12	5.8	100	1	189	92	36	149
412	76	F		YES				SEDENTARY	NO	YES			80	120	70	150	54	24	72	94	0.765957447	TVD	11.4	6	63	0.98	210	152	31	187
413	60	M		YES	YES		YES	ACTIVE	OCCASIONAL				72	120	70	168	64	22.67573696	82	97	0.845360825	DVD	12.5	5.6	129	0.64	218	156	42	100
414	62	M		YES				SEDENTARY	NO				80	130	72	160	50	19.53125	68	80	0.85	SVD	8.2	5	96	1.61	134	56	47	157
415	56	F	YES				YES	SEDENTARY	DAILY	YES			74	120	72	152	64	27.70083102	80	97	0.824742268	SVD	12.5	6	87	0.7	89	76	40	69
416	48	M		YES				ACTIVE	NO				90	120	70	164	60	22.30814991	80	97	0.824742268	SVD	15.2	5.7	95	0.91	128	71	31	131
417	58	M	YES		YES		YES	MODERATE	OCCASIONAL		NEWLY DETECTED		83	150	80	155	47	19.56295525	79	94	0.840425532	SVD	9.2	6.9	95	0.74	105	54	32	98
418	64	M		YES	YES			ACTIVE	NO	YES			74	150	90	160	59	23.046875	80	96	0.833333333	DVD	15.7	6.3	110	1.02	210	120	40	190
419	54	M		YES				MODERATE	NO	YES			53	140	90	165	62	22.77318641	72	96	0.75	DVD	13.8	5.4	84	1.24	201	142	40	93
420	69	F	YES					SEDENTARY	NO				100	120	80	140	32	16.32653061	70	87	0.804597701	N	12.4	6.1	102	0.64	150	127	50	89
421	76	M		YES				SEDENTARY	DAILY				102	130	80	150	70	31.11111111	72	98	0.734693878	TVD	11.9	6.3	149	0.96	141	86	37	98
422	38	M		YES	YES	YES	YES	SEDENTARY	NO	YES			110	130	80	175	85	27.75510204	80	102	0.784313725	SVD	13.2	6.1	139	0.89	169	180	40	210
423	54	F	YES					MODERATE	NO				76	120	84	154	68	28.67262608	78	96	0.8125	N	9	5.9	117	1.11	119	69	34	119
424	70	M	YES				YES	SEDENTARY	OCCASIONAL				84	110	74	167	55	19.72103697	76	98	0.775510204	SVD	9.2	5.9	113	1.8	325	226	39	180
425	50	M		YES				SEDENTARY	NO				120	100	70	150	48	21.33333333	68	87	0.781609195	N	12.5	6.3	143	0.5	210	170	45	150
426	40	M	YES			YES		SEDENTARY	NO		NEWLY DETECTED		100	100	70	165	60	22.03856749	77	93	0.827956989	N	13.8	7	97	0.93	110	23	23	322
427	70	M		YES			YES	MODERATE	OCCASIONAL		YES		86	130	90	170	58	20.06920415	77	89	0.865168539	N	13.2	9.4	319	0.72	148	87	30	155
428	60	F		YES				MODERATE	NO				88	120	70	150	48	21.33333333	72	98	0.734693878	N	9.1	5.1	88	0.64	189	130	41	99
429	48	M		YES	YES		YES	MODERATE	DAILY		YES		74	100	70	160	59	23.046875	80	96	0.833333333	N	12.2	13	162	0.61	188	142	46	125
430	52	M		YES	YES			SEDENTARY	OCCASIONAL		YES		76	120	70	165	64	23.50780533	76	98	0.775510204	N	14.6	6.9	76	0.8	193	153	34	118
431	52	F	YES				YES	ACTIVE	WEEKLY				100	120	90	150	49	21.77777778	64	78	0.820512821	DVD	11.4	5.8	98	0.55	111	57	40	68
432	70	M		YES	YES	YES	YES	SEDENTARY	DAILY				60	160	80	165	65	23.87511478	77	98	0.785714286	TVD	16.9	6.5	155	1.73	98	59	15	122
433	70	M		YES	YES			MODERATE	DAILY	YES	YES		140	110	80	160	60	23.4375	78	92	0.847826087	DVD	13.9	6.7	265	1.33	189	150	38	122
434	50	M		YES			YES	MODERATE	OCCASIONAL		YES		120	150	100	170	86	29.75778547	90	120	0.75	DVD	18.2	7.6	250	0.86	172	113	49	48
435	65	M		YES		YES		ACTIVE	NO		YES		66	130	80	165	60	22.03856749	80	94	0.85106383	N	14.8	7.2	281	0.74	170	186	42	90
436	43	M		YES				MODERATE	NO				66	140	90	158	54	21.63114885	70	88	0.795454545	N	15.8	5.3	153	0.91	214	126	49	197
437	61	F		YES				SEDENTARY	NO	YES	YES		82	110	70	162	70	26.6727633	82	110	0.745454545	N	13.3	8	204	1.12	203	133	47	180
438	74	M		YES				MODERATE	NO				80	100	60	170	58	20.06920415	78	97	0.804123711	SVD	13.1	5.9	83	1.22	200	137	30	110
439	55	M	YES		YES	YES	YES	SEDENTARY	NO	YES			76	110	70	165	63	23.14049587	75	95	0.789473684	N	14.8	5	87	1.51	193	128	43	111
440	59	F	YES					MODERATE	NO				54	120	80	140	38	19.3877551	65	78	0.833333333	N	12.9	5.3	84	0.53	193	153	34	118
441	57	F	YES					MODERATE	DAILY	YES			60	104	54	140	48	24.48979592	84	89	0.943820225	SVD	10.2	5.8	97	41	148	87	30	155
442	66	F		YES				MODERATE	NO		YES		80	120	70	156	75	30.81854043	87	89	0.97752809	SVD	14.1	9.9	116	0.93	125	69	28	142
443	64	M		YES			YES	SEDENTARY	NO	YES			74	90	60	164	65	24.1671624	80	84	0.952380952	SVD	14.3	4.9	140	1.2	139	27	25	436
444	53	M		YES				ACTIVE	NO	YES			60	100	70	170	76	26.29757785	74	82	0.902439024	N	14.3	5.8	104	0.94	193	153	34	118
445	61	M		YES			YES	SEDENTARY	OCCASIONAL				70	130	80	169	70	24.50894577	70	80	0.875	TVD	10.7	4.8	91	0.57	111	57	40	68
446	52	M	YES					MODERATE	NO		YES		70	110	80	170	74	25.60553633	80	86	0.930232558	TVD	119	7.7	123	0.77	95	32	31	158

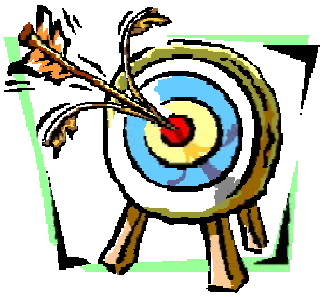
447	60	F		YES			YES	MODERATE	OCCASIONAL	YES			90	150	90	150	78	34.66666667	79	84	0.94047619	N	12.5	6.4	102	0.76	165	129	36	85
448	65	F	YES				YES	MODERATE	NO	YES			102	90	60	146	65	30.49352599	76	93	0.817204301	N	12.9	6	103	0.82	150	76	50	121
449	67	M	YES				YES	MODERATE	NO	YES	YES		96	130	90	168	72	25.51020408	84	88	0.954545455	DVD	12.7	11.9	321	0.93	235	168	40	191
450	60	F		YES				MODERATE	NO	YES	YES		98	140	90	165	74	27.18089991	84	86	0.976744186	TVD	10.7	7.5	235	0.7	93	46	18	146
451	45	M	YES		YES			MODERATE	NO				94	124	90	164	59	21.93634741	70	86	0.813953488	N	11.7	6	86	0.74	210	120	38	190
452	65	M		YES				MODERATE	NO	YES			80	150	90	170	70	24.22145329	83	90	0.922222222	N	14.4	5.9	125	0.97	150	127	45	146
453	39	M		YES	YES	YES	YES	ACTIVE	DAILY				124	120	80	164	64	23.7953599	76	90	0.844444444	N	9.1	5.5	124	1.28	80	26	11	216
454	48	M		YES				SEDENTARY	NO				81	150	90	170	68	23.52941176	78	88	0.886363636	N	11	5.9	100	0.9	174	119	28	136
455	60	M		YES	YES			SEDENTARY	NO	YES	YES		86	140	90	152	64	27.70083102	94	100	0.94	TVD	15.3	11.2	202	0.96	108	26	37	224
456	50	M	YES					SEDENTARY	WEEKLY	YES	YES		96	130	80	172	80	27.04164413	101	103	0.980582524	N	13.8	14.1	366	0.66	170	101	30	196
457	56	M	YES					SEDENTARY	NO	YES	YES		79	190	80	171	86	29.41075887	90	102	0.882352941	TVD	11.5	8.7	210	1.01	116	69	18	143
458	58	M		YES		YES		SEDENTARY	NO	YES			76	130	80	163	65	24.4646016	73	98	0.744897959	TVD	13.6	6.2	134	0.76	170	120	30	140
459	52	M		YES	YES			SEDENTARY	WEEKLY	YES			80	110	70	160	74	28.90625	74	90	0.822222222	SVD	12.3	6.2	84	1.23	172	101	54	86
460	65	F	YES					SEDENTARY	NO				100	100	60	146	65	30.49352599	70	84	0.833333333	N	12.9	4.9	103	0.82	150	76	50	121
461	60	M	YES				YES	SEDENTARY	NO				86	120	80	160	45	17.578125	68	76	0.894736842	N	12.9	5.2	75	1.31	169	120	39	181
462	45	M	YES		YES			MODERATE	OCCASIONAL				80	130	80	167	59	21.1552942	75	89	0.842696629	SVD	16	6.2	147	0.98	186	154	38	139
463	68	M	YES					SEDENTARY	NO	YES	YES		100	160	100	165	60	22.03856749	77	95	0.810526316	SVD	15.3	12.9	158	1.29	250	187	45	160
464	37	M		YES	YES	YES		SEDENTARY	NO	YES	YES		70	120	70	160	65	25.390625	79	103	0.766990291	DVD	14.2	7.1	112	0.96	321	180	36	190
465	43	M	YES					MODERATE	DAILY	YES			58	100	60	150	60	26.66666667	80	100	0.8	DVD	12.3	6.2	94	0.96	115	69	25	107
466	41	M	YES					SEDENTARY	NO		YES		28	100	60	152	50	21.64127424	76	94	0.808510638	N	14.5	14	366	0.89	126	100	36	140
467	40	M		YES				SEDENTARY	NO				70	116	70	158	50	20.02884153	70	91	0.769230769	N	11.2	5.8	196	1.4	159	104	41	96
468	66	M	YES				YES	SEDENTARY	NO				110	90	50	160	52	20.3125	75	97	0.773195876	DVD	14.1	6	109	1.45	210	29	50	89
469	60	M		YES			YES	ACTIVE	DAILY				90	140	90	160	48	18.75	73	95	0.768421053	TVD	15.2	5.8	96	1.46	214	108	39	337
470	58	M		YES		YES		ACTIVE	DAILY				48	90	50	166	70	25.40281608	67	90	0.744444444	SVD	13.7	8	142	0.98	159	141	29	109
471	65	M		YES				ACTIVE	DAILY			HBSAG	80	130	80	164	71	26.39797739	82	100	0.82	SVD	13.1	5.9	119	0.79	174	119	28	136
472	56	M		YES	YES		YES	SEDENTARY	NO	YES			72	120	70	167	67	24.02380867	86	98	0.87755102	DVD	14.8	6	97	1.15	98	76	29	82
473	35	M		YES				SEDENTARY	NO	YES	YES		130	160	70	163	59	22.20633069	80	102	0.784313725	SVD	14.6	4.9	80	1.73	102	159	29	130
474	48	F		YES				ACTIVE	DAILY				80	100	80	168	71	25.15589569	79	98	0.806122449	SVD	10.7	5.9	115	0.71	160	106	39	180
475	78	F	YES					ACTIVE	NO	YES			70	100	60	145	34	16.17122473	68	81	0.839506173	SVD	10.4	6	128	0.67	165	112	55	75
476	75	M		YES		YES		ACTIVE	NO	YES	YES		120	110	70	170	50	17.30103806	76	98	0.775510204	SVD	11.4	9.1	154	0.77	129	140	31	187
477	62	M		YES	YES		YES	SEDENTARY	NO		YES		90	130	80	170	75	25.95155709	82	110	0.745454545	TVD	16.5	7.1	175	0.9	214	123	30	303
478	55	M	YES			YES		SEDENTARY	NO		YES		84	100	60	165	60	22.03856749	77	95	0.810526316	DVD	10.8	12	249	1.19	116	60	39	84
479	75	M		YES		YES		ACTIVE	NO	YES	YES		48	190	70	160	65	25.390625	79	103	0.766990291	TVD	12.9	8	227	1.24	154	106	36	61
480	75	M	YES					SEDENTARY	NO	YES			130	120	70	150	60	26.66666667	80	100	0.8	DVD	11.4	6.3	164	0.93	211	131	66	68
481	70	F	YES					SEDENTARY	NO				84	160	100	152	50	21.64127424	76	94	0.808510638	DVD	12.3	5.8	82	0.93	186	154	38	139
482	80	F		YES				SEDENTARY	OCCASIONAL				70	116	70	158	50	20.02884153	70	91	0.769230769	DVD	9.4	5.7	110	1.53	250	187	45	160
483	56	M	YES		YES	YES	YES	SEDENTARY	WEEKLY		NEWLY DETECTED		56	100	70	160	52	20.3125	75	97	0.773195876	TVD	13.6	9.3	248	1.01	104	42	36	130
484	65	M	YES					ACTIVE	DAILY		YES		82	140	90	160	48	18.75	73	95	0.768421053	DVD	13.3	8	89	0.96	90	59	32	86
485	45	M		YES				ACTIVE	NO		YES		70	110	80	156	49	20.13477975	67	90	0.744444444	SVD	12.1	7	109	0.66	232	153	46	165
486	53	M	YES		YES	YES	YES	ACTIVE	OCCASIONAL		YES		80	120	70	168	58	20.54988662	77	96	0.802083333	TVD	15.5	10	341	0.77	210	150	40	190
487	36	M		YES				ACTIVE	DAILY				85	110	70	160	49	19.140625	69	90	0.766666667	SVD	14.4	5.3	91	1.04	142	81	43	89
488	48	M		YES	YES			ACTIVE	DAILY	YES	YES		60	100	60	172	72	24.33747972	85	99	0.858585859	SVD	15.9	12	398	1.05	213	139	59	76
489	43	M		YES	YES	YES		ACTIVE	DAILY	YES	YES		68	140	80	160	52	20.3125	86	99	0.868686869	DVD	13	9	213	0.86	214	123	30	303

490	33	M		YES	YES	YES		ACTIVE	DAILY				60	100	60	148	58	26.47918188	70	95	0.736842105	SVD	15.5	5.6	99	1.39	116	60	39	84
491	65	M		YES				ACTIVE	DAILY				80	110	70	170	58	20.06920415	76	95	0.8	DVD	13.1	5.5	127	0.89	154	106	36	61
492	62	M		YES				SEDENTARY	NO				74	120	70	164	54	20.07733492	76	98	0.775510204	SVD	11.6	5.3	106	0.83	211	131	66	68
493	65	M	YES		YES		YES	ACTIVE	NO				74	170	90	164	52	19.33372992	74	98	0.755102041	DVD	14.4	5.8	103	0.91	151	99	30	109
494	33	M	YES		YES			ACTIVE	NO				88	90	60	150	45	20	70	100	0.7	SVD	15.5	5.6	99	1.39	169	150	39	186
495	51	M		YES				SEDENTARY	NO	YES			88	200	100	164	54	20.07733492	70	90	0.777777778	SVD	15.6	5.7	323	0.78	168	118	34	79
496	70	M		YES				ACTIVE	NO		YES		58	90	60	160	45	17.578125	65	85	0.764705882	SVD	14.9	9	251	1.18	188	108	30	252
497	72	F	YES				YES	ACTIVE	NO				100	180	90	158	42	16.82422689	67	90	0.744444444	SVD	10.4	5.5	155	0.9	136	76	37	113
498	60	M		YES			YES	MODERATE	OCCASIONAL				60	130	80	170	70	24.22145329	74	98	0.755102041	SVD	11.6	5.9	147	0.8	140	80	40	96
499	69	M		YES				MODERATE	DAILY				130	90	60	160	70	27.34375	78	102	0.764705882	SVD	11.3	6	105	1.17	101	35	57	45
500	50	M		YES	YES		YES	MODERATE	DAILY	YES		OLD CVA	86	100	70	158	42	16.82422689	68	80	0.85	DVD	13.1	5.7	140	0.99	242	172	43	136
501	65	M		YES				MODERATE	DAILY				94	200	110	158	43	17.22480372	68	90	0.755555556	SVD	13.9	5.8	114	1.03	193	112	69	61
502	55	M		YES				SEDENTARY	NO				84	170	100	165	52	19.10009183	72	91	0.791208791	N	12.7	4.9	125	1.13	110	52	41	80
503	68	M		YES			YES	SEDENTARY	NO	YES			83	120	80	166	72	26.12861083	85	110	0.772727273	SVD	11.2	6.1	177	1	147	93	39	77
504	70	M	YES					SEDENTARY	NO		YES		100	80	60	165	65	23.87511478	78	99	0.787878788	SVD	13.8	10.8	478	1.22	150	100	40	70
505	54	M	YES		YES			SEDENTARY	NO				73	110	70	170	70	24.22145329	76	98	0.775510204	SVD	13.7	5	108	0.64	162	107	42	64
506	46	M		YES				ACTIVE	DAILY			HBSAG	80	130	80	164	71	26.39797739	82	100	0.82	SVD	15.4	5.6	76	0.84	211	131	66	68
507	49	M		YES	YES		YES	SEDENTARY	NO	YES			72	170	80	167	67	24.02380867	86	98	0.87755102	DVD	14.3	6	85	0.98	151	99	30	109
508	88	M		YES				SEDENTARY	OCCASIONAL	YES	YES		130	160	110	163	59	22.20633069	80	102	0.784313725	DVD	10	9.4	283	0.67	169	150	39	186
509	60	M		YES	YES			ACTIVE	NO		YES		110	140	90	166	60	21.77384236	72	90	0.8	SVD	14	7.8	123	0.95	169	120	50	96
510	53	M		YES	YES	YES		SEDENTARY	OCCASIONAL	YES	YES		70	210	110	162	54	20.57613169	75	95	0.789473684	SVD	14.6	12.2	387	0.76	250	160	40	280
511	80	F		YES				SEDENTARY	NO	YES			100	120	80	165	64	23.50780533	76	98	0.775510204	DVD	12.1	6.2	126	0.95	229	167	47	187
512	74	M	YES					MODERATE	WEEKLY		YES		75	140	80	162	60	22.86236854	80	100	0.8	SVD	17.9	10.2	435	1.33	212	142	49	105
513	67	M		YES				SEDENTARY	NO	YES	YES		68	140	70	59	67	192.4734272	84	96	0.875	SVD	13.5	7.1	104	0.96	148	60	57	153
514	70	F		YES				SEDENTARY	NO	YES	YES		122	130	80	150	48	21.33333333	78	96	0.8125	N	12.6	6.9	230	0.77	167	123	40	186
515	48	M		YES	YES	YES		SEDENTARY	NO	YES	YES		80	150	80	164	70	26.0261749	80	100	0.8	SVD	13.2	11.4	342	0.61	128	79	30	93
516	70	M		YES				ACTIVE	NO	YES			80	120	80	165	84	30.85399449	76	98	0.775510204	DVD	14.7	5.8	94	1.08	149	103	40	86
517	60	F		YES				MODERATE	DAILY		YES	PTB	80	90	60	161	76	29.31985649	86	112	0.767857143	SVD	11.3	11.4	590	0.75	219	129	63	133
518	54	F	YES					SEDENTARY	NO		YES		106	170	70	152	50	21.64127424	77	95	0.810526316	DVD	13.5	12.6	65	0.46	155	82	57	78
519	68	M	YES					ACTIVE	NO	YES	YES		80	150	90	145	40	19.02497027	69	83	0.831325301	DVD	14.2	10.8	365	1.06	172	96	33	215
520	37	M	YES		YES	YES		MODERATE	DAILY				109	110	70	167	55	19.72103697	75	98	0.765306122	N	15.3	4.9	131	0.93	159	106	34	97
521	68	F		YES				MODERATE	DAILY				110	110	70	165	63	23.14049587	73	97	0.75257732	SVD	13	5.5	150	0.8	103	63	25	75
522	76	M	YES					SEDENTARY	NO	YES			100	100	60	170	83	28.71972318	84	112	0.75	SVD	14.4	5.5	208	1.04	192	93	45	271
523	54	M	YES				YES	MODERATE	OCCASIONAL		NEWLY DETECTED		80	120	80	150	54	24	78	92	0.847826087	DVD	15.2	8	188	1.2	260	163	40	286
524	70	F		YES			YES	ACTIVE	NO	YES		COPD	150	100	80	166	50	18.14486863	78	98	0.795918367	TVD	10.4	6.1	87	1.05	120	95	40	106
525	65	M		YES				SEDENTARY	NO	YES			86	120	70	169	59	20.65754	80	100	0.8	SVD	14	6.2	125	1	211	131	66	68
526	70	F		YES				SEDENTARY	NO	YES	YES		86	120	70	146	45	21.11090261	78	98	0.795918367	TVD	10.4	7	85	0.89	151	99	30	109
527	49	F		YES			YES	SEDENTARY	OCCASIONAL		NEWLY DETECTED		74	120	80	158	64	25.63691716	78	98	0.795918367	N	12.8	6.8	152	0.73	169	150	39	186
528	46	M		YES	YES			ACTIVE	DAILY		YES		70	130	90	165	64	23.50780533	76	98	0.775510204	SVD	15.4	10.3	114	0.72	101	48	33	99
529	55	F		YES			YES	SEDENTARY	NO				70	100	70	162	74	28.1969212	80	102	0.784313725	DVD	10.9	6	192	0.73	116	67	32	76
530	42	M	YES				YES	ACTIVE	NO				68	110	70	156	42	17.25838264	70	86	0.813953488	SVD	11.2	5	160	1.15	126	60	42	89
531	62	M		YES				ACTIVE	NO	YES	YES		80	120	70	172	86	29.06976744	84	110	0.763636364	DVD	15.2	8.3	80	1.3	186	154	38	139
532	60	M		YES	YES			ACTIVE	NO	YES			90	120	70	170	53	18.33910035	73	100	0.73	SVD	12	5.9	100	1	250	187	45	160

533	72	F		YES				SEDENTARY	NO		YES		52	90	60	148	42	19.17457999	68	92	0.739130435	TVD	10.2	6.8	401	1.38	64	50	11	17
534	50	M	YES					ACTIVE	OCCASIONAL				80	120	70	170	58	20.06920415	72	98	0.734693878	SVD	12.7	5.7	172	0.78	214	180	34	196
535	42	M		YES	YES			ACTIVE	OCCASIONAL				80	100	80	178	71	22.40878677	79	98	0.806122449	DVD	13.7	6.3	73	0.9	150	170	50	210
536	26	M	YES		YES	YES	YES	SEDENTARY	NO				80	120	80	164	72	26.76977989	78	96	0.8125	SVD	15.6	6	77	0.86	167	110	41	78
537	75	F	YES					MODERATE	NO	YES			60	110	70	158	65	26.03749399	78	92	0.847826087	N	11.5	4.9	71	1	100	86	40	88
538	19	M	YES		YES	YES		SEDENTARY	NO				80	120	70	162	49	18.67093431	70	84	0.833333333	N	12.8	5.9	81	0.66	361	327	24	52
539	38	M		YES	YES			SEDENTARY	NO		NEWLY DETECTED		94	100	70	163	74	27.85200798	72	76	0.947368421	N	14.3	6.7	120	0.66	327	219	46	310
540	64	M		YES				ACTIVE	OCCASIONAL	YES	YES		80	100	50	155	51	21.22788762	80	86	0.930232558	TVD	11.6	10.9	108	0.75	129	49	37	217
541	58	M		YES				SEDENTARY	NO		YES		92	120	70	164	61	22.67995241	96	104	0.923076923	TVD	13.1	12	108	0.82	152	75	38	197
542	46	F		YES				SEDENTARY	NO				62	100	60	153	41	17.51463112	68	72	0.944444444	N	10.9	5.5	79	0.69	150	103	39	88
543	58	M	YES				YES	SEDENTARY	NO	YES			64	120	80	163	74	27.85200798	80	98	0.816326531	DVD	13.5	6.5	172	1.16	131	56	44	155
544	62	M	YES					MODERATE	OCCASIONAL	YES	NEWLY DETECTED		100	118	76	150	69	30.66666667	80	86	0.930232558	N	10.2	6.7	164	0.77	136	40	37	297
545	76	M	YES					SEDENTARY	NO	YES			110	130	80	175	65	21.2244898	100	106	0.943396226	TVD	16.1	6	103	1.05	101	48	33	99
546	73	M		YES			YES	ACTIVE	NO	YES		BPH	70	140	80	165	66	24.24242424	91	97	0.93814433	SVD	14.3	5.2	85	1.15	116	67	32	76
547	61	M	YES		YES		YES	ACTIVE	NO				80	120	70	158	65	26.03749399	72	90	0.8	TVD	13.6	5.6	83	0.94	151	86	30	176
548	41	M		YES				ACTIVE	OCCASIONAL				76	120	70	150	45	20	70	90	0.777777778	TVD	14.9	6	86	0.89	250	182	40	141
549	52	M	YES		YES			MODERATE	OCCASIONAL		YES		60	90	60	170	54	18.68512111	54	75	0.72	TVD	9.9	6.8	95	1.14	100	46	39	75
550	61	M		YES				SEDENTARY	DAILY	YES			76	126	70	157	52	21.09619051	82	90	0.911111111	N	13.7	5.9	81	1.48	167	140	32	98
551	41	M		YES	YES		YES	ACTIVE	DAILY	YES			100	110	70	168	53	18.77834467	71	86	0.825581395	TVD	12.9	5.5	82	0.88	174	103	47	122
552	40	M		YES				SEDENTARY	OCCASIONAL			RVD	94	130	80	169	58	20.30741221	91	93	0.978494624	SVD	13	5.9	75	1.19	139	85	18	180
553	51	M		YES	YES		YES	ACTIVE	NO		NEWLY DETECTED	TB	60	110	70	150	54	24	70	92	0.760869565	SVD	14.6	6.6	170	0.88	156	91	26	197
554	60	M		YES	YES			ACTIVE	NO		YES		80	110	70	168	65	23.03004535	88	90	0.977777778	TVD	13.3	10	254	0.82	111	51	30	149
555	68	F		YES				SEDENTARY	NO				97	90	64	148	51	23.28341855	76	90	0.844444444	DVD	9.2	5.4	126	0.87	112	51	42	96
556	39	M	YES				YES	ACTIVE	DAILY				64	140	90	170	77	26.64359862	90	112	0.803571429	N	12	6	210	0.9	119	120	61	180
557	63	M		YES			YES	ACTIVE	WEEKLY	YES	YES		80	110	70	168	80	28.3446712	90	110	0.818181818	N	11.2	8.7	205	0.86	186	154	38	139
558	32	M		YES	YES			SEDENTARY	OCCASIONAL				106	100	70	165	62	22.77318641	76	98	0.775510204	DVD	16.7	6.4	196	1.22	250	187	45	160
559	70	M	YES			YES		MODERATE	NO		YES		80	110	70	160	50	19.53125	69	90	0.766666667	DVD	14.2	7.4	312	4.11	174	109	47	87
560	60	F	YES					SEDENTARY	NO				80	100	60	168	74	26.21882086	84	109	0.770642202	DVD	14.6	6.2	160	0.75	161	88	47	130
561	55	F	YES					SEDENTARY	NO	YES	NEWLY DETECTED		70	100	60	170	65	22.49134948	80	97	0.824742268	DVD	12.2	10.5	366	0.66	189	145	44	106
562	57	M		YES				MODERATE	OCCASIONAL	YES			100	126	70	170	60	20.76124567	80	96	0.833333333	SVD	13.7	5.9	166	1.31	125	84	45	76
563	61	F	YES					ACTIVE	NO	YES			100	110	70	156	70	28.76397107	84	110	0.763636364	SVD	12.4	5.8	205	0.73	253	167	42	219
564	38	F		YES			YES	ACTIVE	WEEKLY	YES			80	100	60	161	56	21.60410478	65	89	0.730337079	DVD	11.9	5.7	87	0.51	149	82	39	140
565	57	M		YES				MODERATE	NO	YES	YES		83	100	60	167	70	25.0995016	86	103	0.834951456	DVD	13.6	10	434	0.68	117	57	31	143
566	74	M	YES					SEDENTARY	NO	YES	YES		150	150	100	165	68	24.97704316	82	105	0.780952381	DVD	8	7.1	322	1.4	107	52	42	63
567	40	M		YES	YES		YES	ACTIVE	OCCASIONAL				88	100	60	168	60	21.2585034	85	100	0.85	N	18	4.9	196	1.16	186	154	38	139
568	65	F	YES					MODERATE	NO	YES	YES		80	120	70	162	67	25.52964487	75	92	0.815217391	TVD	12.5	8.9	289	0.84	250	187	45	160
569	50	F	YES					MODERATE	OCCASIONAL				90	110	74	165	53	19.46740129	74	91	0.813186813	TVD	12.3	6.2	86	0.68	132	69	40	115
570	54	M	YES		YES		YES	MODERATE	NO		YES		80	140	60	166	60	21.77384236	77	92	0.836956522	SVD	15.7	8.3	205	0.94	158	103	26	147
571	74	M		YES			YES	ACTIVE	NO				80	140	80	160	49	19.140625	69	89	0.775280899	SVD	16.8	5.9	64	1.72	140	80	40	80
572	65	F		YES				MODERATE	NO	YES			80	130	72	165	65	23.87511478	86	102	0.843137255	TVD	12.9	5.7	116	0.71	188	106	64	91
573	58	M	YES		YES		YES	ACTIVE	OCCASIONAL				80	130	80	167	70	25.0995016	76	99	0.767676768	SVD	16.2	5	74	0.81	149	76	51	108

574	55	M	YES		YES			MODERATE	OCCASIONAL				90	110	70	165	58	21.30394858	70	91	0.769230769	SVD	14.3	6	72	1.17	181	110	35	181
575	54	F	YES				YES	MODERATE	NO	YES	YES		98	110	70	159	50	19.77769867	70	82	0.853658537	TVD	12.7	5.9	127	0.69	229	149	50	148
576	82	M	YES					ACTIVE	NO				86	140	90	164	68	25.2825699	75	93	0.806451613	SVD	12.2	5.9	122	0.77	100	60	28	70
577	65	M	YES		YES		YES	MODERATE	NO		YES		95	160	100	165	74	27.18089991	72	90	0.8	DVD	11.6	14.5	273	1.06	170	108	45	84
578	75	M		YES				SEDENTARY	NO	YES			66	150	60	161	50	19.28937927	69	89	0.775280899	DVD	15.2	5.9	124	0.89	180	113	31	181
579	62	M		YES			YES	MODERATE	NO	YES	YES		80	110	70	165	53	19.46740129	68	88	0.772727273	SVD	15.3	9.4	316	0.77	98	48	32	90
580	60	M	YES		YES		YES	MODERATE	NO	YES	YES		100	150	90	168	66	23.38435374	80	110	0.727272727	SVD	12.5	11.2	279	0.83	108	13	20	634
581	60	M		YES	YES		YES	SEDENTARY	NO				94	140	90	159	48	18.98659072	69	85	0.811764706	SVD	15	6	123	0.8	186	154	38	139
582	61	M		YES				MODERATE	NO				80	120	90	165	50	18.36547291	72	90	0.8	SVD	11	5.5	180	1	250	187	45	160
583	65	F	YES				YES	MODERATE	OCCASIONAL	YES	YES		80	110	70	158	49	19.6282647	65	80	0.8125	DVD	13.7	7.1	274	1.15	174	109	38	137
584	58	M		YES				ACTIVE	DAILY	YES			84	142	100	165	65	23.87511478	70	98	0.714285714	SVD	15.3	6	129	1.6	273	130	26	533
585	40	M		YES			YES	ACTIVE	NO	YES	NEWLY DETECTED		86	90	60	168	70	24.8015873	82	110	0.745454545	SVD	13	6.9	155	1.11	170	102	28	199
586	55	F	YES					ACTIVE	DAILY	YES	YES		88	110	70	165	61	22.40587695	75	98	0.765306122	TVD	12.3	8.3	122	0.74	148	84	47	84
587	70	F		YES			YES	SEDENTARY	NO		YES		60	140	60	159	60	23.7332384	80	100	0.8	DVD	12.9	10.4	291	0.66	103	63	25	75
588	79	M		YES				SEDENTARY	NO	YES	YES		80	120	90	158	56	22.43230252	65	86	0.755813953	SVD	11	6.8	106	0.68	192	93	45	271
589	40	M		YES			YES	ACTIVE	DAILY		YES		92	130	80	160	59	23.046875	75	99	0.757575758	TVD	13.8	7.8	85	0.74	127	68	29	148
590	48	M		YES				SEDENTARY	NO				76	120	70	155	50	20.81165453	68	90	0.755555556	SVD	12	6.1	100	0.8	120	70	31	150
591	40	F	YES					SEDENTARY	NO				80	110	70	149	62	27.92666997	68	86	0.790697674	N	11.4	5.9	114	0.66	129	65	25	112
592	75	F	YES				YES	ACTIVE	NO		NEWLY DETECTED		74	130	80	155	41	17.06555671	78	90	0.866666667	TVD	14.3	8	135	0.79	139	78	31	119
593	68	M		YES	YES			MODERATE	NO				68	130	70	164	61	22.67995241	96	101	0.95049505	TVD	10.9	6	100	1.23	136	71	37	140
594	65	M	YES					MODERATE	OCCASIONAL	YES			54	120	70	164	73	27.14158239	78	96	0.8125	SVD	15.2	6.5	150	0.98	256	175	50	157
595	76	M	YES					SEDENTARY	DAILY	YES			100	100	60	170	83	28.71972318	84	112	0.75	SVD	13.1	5.5	208	1.04	120	102	39	80
596	47	F	YES				YES	MODERATE	DAILY				94	110	80	160	70	27.34375	82	96	0.854166667	DVD	13.3	5.7	60	0.49	42	12	18	59
597	59	F	YES					MODERATE	NO				54	120	80	140	38	19.3877551	65	78	0.833333333	N	12.9	5.3	84	0.53	193	153	34	118
598	44	M		YES			YES	SEDENTARY	NO		Y		110	110	80	163	59	22.20633069	76	98	0.775510204	N	15.6	11.5	304	0.6	170	92	32	210
599	48	F		YES				SEDENTARY	OCCASIONAL				80	114	72	165	72	26.44628099	78	96	0.8125	N	12.9	6	65	0.6	176	101	41	169
600	65	F	YES					SEDENTARY	OCCASIONAL				114	120	70	156	60	24.65483235	76	90	0.844444444	TVD	10.7	6.1	85	0.79	167	109	46	61
601	60	M		YES			YES	ACTIVE	DAILY				90	140	90	160	48	18.75	73	95	0.768421053	TVD	15.2	5.8	96	1.46	214	108	39	337
602	48	F		YES				ACTIVE	DAILY				80	100	80	168	71	25.15589569	79	98	0.806122449	SVD	10.7	5.9	115	0.71	160	106	39	180

Introduction



Objectives

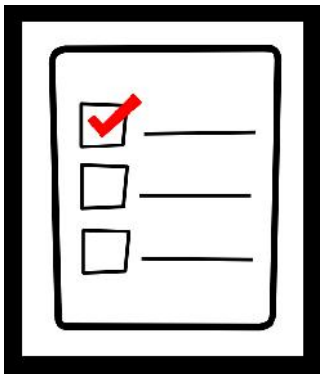
Review of Literature

Methodology

Results

Discussion

Conclusion

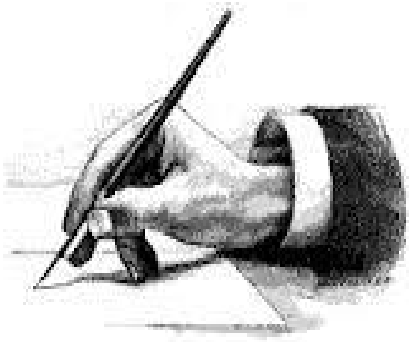


Limitations

Recommendations

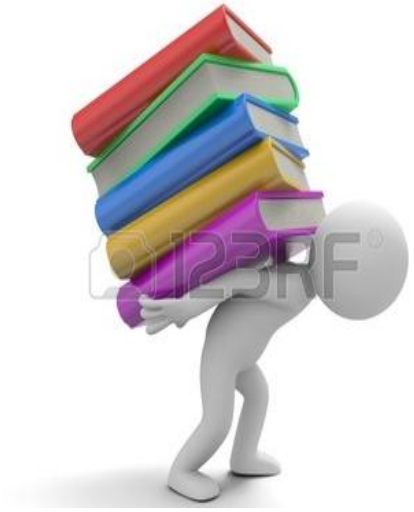
Summary

Bibliography



Annexure-I

Annexure-II



Annexure-III

Annexure-IV

Annexure-V