



A STUDY OF SEVERAL PROBLEMS OF HEART PATIENTS IN KOLHAPUR DISTRICT USING STATISTICAL TECHNIQUES

Prakash S. Chougule¹, Tejaswi S.Kurane², Mr.Pavankumar T.Patil³.

Mr. Gawade Sandesh R.⁴, Mr. Suraj R. Patil⁵

Associate Professor¹, Assistant Professor², Research Student^{3,4,5}

Department of Statistics, Rajarshi Chhatrapati Shahu College, Kolhapur (MS), India

ABSTRACT

Heart disease is the leading cause of death. The term "heart disease refers to several types of heart conditions that affect the heart, Coronary artery disease Heart Failure,. Arrhythmia, heart valve disease and Pericardial Disease, Cardiomyopathy (Heart Muscle Disease) , Congenital 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. The World Health Organization and Global Burden of Disease Study also have highlighted increasing trends in years of life lost and disability-adjusted life years from Congenital Heart Disease in India .The Cardiovascular diseases have now become the leading cause of mortality in India. In order to study several problems of Heart Patients we collect the information through systematic questionnaires containing number of attributes and the collected information are analyzed using several statistical tools and techniques. Our study shows, the prevalence of heart diseases and heart diseases related complications are more in male than in female.

KEYWORDS: CHD, Parametric Test, Nonparametric Test, Level of Significance.

INTRODUCTION

According to the World Health Organization, every year 12 million deaths occur worldwide due to Heart Disease. Heart disease is one of the biggest causes of morbidity and mortality among the population of the world. Prediction of cardiovascular disease is regarded as one of the most important subjects in the section of data analysis. The load of cardiovascular disease is rapidly increasing all over the world from the past few years. Many researches have been conducted in attempt to pinpoint the most influential factors of heart disease as well as accurately predict the overall risk. Heart Disease is even highlighted as a silent killer which leads to the death of the person without obvious symptoms. The early diagnosis of heart disease plays a vital role in making decisions on lifestyle changes in high-risk patients and in turn reduces the complications.

Heart is an important organ of the human body. It pumps blood to every part of our anatomy. If it fails to function correctly, then the brain and various other organs will stop working, and within few minutes, the person will die. Change in lifestyle, work related stress and bad food habits contribute to the increase in the rate of several heart-related diseases. Heart diseases have emerged as one of the most prominent causes of death all around the world. According to World Health Organisation, heart related diseases are responsible for taking 17.7 million lives every year, 31% of all global deaths. In India too, heart-related diseases have become the leading cause of mortality. Heart diseases have killed 1.7 million Indians in 2016, according to the 2016 Global Burden of Disease Report, released on 15th September 2017. Heart-related diseases increase the spending on health care and also reduce the productivity of an individual. Estimates made by the World Health Organisation (WHO), suggest that India has lost up to \$237 billion, from 2005 to 2015, due to heart-related or Cardiovascular diseases. Thus, feasible and accurate prediction of heart-related diseases is very important. Medical organizations, all around the world, collect data on various health-related issues. These data can be exploited using various machine learning techniques to gain useful insights. But the data collected is very massive and, many times, this data can be very noisy. These datasets, which are too overwhelming for human minds to comprehend.

According to the World Health Organization (WHO), cardiovascular disease mortality will rise to almost 30 million by 2040 S. I. Ayon, M. M. et. al.(2020). Electrocardiogram (ECG), echocardiogram (heart ultrasound), cardiac magnetic resonance imaging (MRI), stress tests (exercise stress test, stress ECG, nuclear cardiac stress test), and angiography are commonly used tests by physicians to help identify cardiovascular problems. Poornima et. al. (2018) studied Effective heart disease prediction system using data mining techniques and conclude that This system performs realistically well even without retraining. Furthermore, the experimental results show that the system predicts heart disease with ~100% accuracy by using neural networks. In order to study the various pattern of heart patient in Kolhapur district. We prepare a systematic Questionnaire contains the number of attributes and collected information are analyzed using different statistical tools and techniques.