



ISCHEMIC HEART DISEASE

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Abstract: *This article deals with the Background Ischemic heart disease, which is a leading cause of death worldwide. Also referred to as coronary artery disease and atherosclerotic cardiovascular disease, it manifests clinically as myocardial infarction and ischemic cardiomyopathy. This study aims to evaluate the epidemiological trends of ischemic heart disease globally. Methods The most up-to-date epidemiological data from the Global Burden of Disease dataset were analyzed. Global Burden of Disease collates data from a large number of sources, including research studies, hospital registries, and government reports. This article analyzed the incidence, prevalence, and disability-adjusted life years for ischemic heart disease. Age-standardized rates, which remove the effect of population changes over time, have decreased in many regions. Conclusions ischemic heart disease is the number one cause of death, disability, and human suffering globally. Age-adjusted rates show a promising decrease.*

Key words: *heart disease, epidemiology, risk factor, myocardial, ischemia, systolic blood pressure, cholesterol, diet, fasting, medicine, plasma, glucose, risk, attributable, body.*

Cardiovascular diseases cause approximately one-third of deaths worldwide. Among cardiovascular illnesses, ischemic heart disease (IHD) ranks as the most prevalent. Indeed, ischemic heart disease is acknowledged as an important threat to sustainable development in the 21st century. Also referred to as coronary artery disease (CAD) and atherosclerotic cardiovascular disease (ACD), ischemic heart disease manifests clinically as myocardial infarction and ischemic cardiomyopathy. An increasing number of individuals with non-fatal ischemic heart disease live with chronic disabilities and impaired quality of life. The primary pathological process that leads to ischemic heart disease is atherosclerosis, an inflammatory disease of the arteries associated with lipid deposition and metabolic alterations due to multiple risk factors. More than 70% of at-risk individuals have multiple risk factors for ischemic heart disease, and only 2%-7% of the general population have no risk factors.

The increasing incidence of ischemic heart disease is expected to continue, due not only to the increased prevalence of obesity, diabetes, and metabolic syndrome but also to population aging. The past two decades have witnessed a steep rise in global population aging. Indeed, the United Nations Organization estimates an increase in the population aged over 65 years from one in 11 in 2019 to one in six by 2050. Emerging issues with social relationships, psychological distress, and less than six hours of sleep a night also contribute to ischemic heart disease in the current generation. Rapid urbanization and globalization in the lower and middle-income countries have led to a shift in disease-related deaths and disabilities from infectious disease to non-communicable diseases such as ischemic heart disease.

The financial impact of ischemic heart disease stems from hospitalizations, treatments, revascularization procedures, clinic visits, emergency visits, and prescribed drug treatments. According to the World Heart Federation, the global cost of cardiovascular disease (CVD) in 2010 was approximately US\$863 billion, which is expected to rise to more than US\$ 1 trillion by 2030. In most countries like the the cost of ischemic heart disease is approaching 1%-1.5% of the gross domestic product, with costs per episode of ischemic heart disease of more than \$5,000 (7,13). Notably, the median total cost of ischemic heart disease care in low and middle-income countries-specific health expenditure per capita was 10% of the total healthcare expenditure.

Despite the high prevalence, morbidity, and mortality of ischemic heart disease, relatively few studies have quantified current epidemiological trends and global forecasts for ischemic heart disease. For health policy-makers to develop effective and timely strategies to address ischemic heart disease, an up-to-date analysis is needed. This study aims to analyze the global epidemiology of ischemic heart disease based on the most recent data and to estimate its future trends.

Current epidemiological data on ischemic heart disease from the Global Burden of Disease (GBD) dataset were analyzed in this study. The Global Burden of Disease dataset has several attractive features: it is actively maintained and updated based on research data and published epidemiological studies and governmental publications from more than 90,000 sources. According to empirical data, it builds models and statistical estimates for health loss due to illness, injury, and risk factors. Annually, the Global Burden of Disease produces prevalence, incidence, death, and disability-adjusted life years (DALYs) measures, which are used to estimate the overall burden of ischemic heart disease. disability-adjusted life years are calculated by adding YLLs (years of life lost due to premature death) and YLDs (years of life lost due to disability). It is considered a more rigorous measure of the human impact of disease than simple prevalence or mortality rates.

For this study, the latest data from Global Burden of Disease, the 2017 update, was used. This includes annual figures from 1990 to 2017 for ischemic heart disease in almost all countries and regions. No regions or countries were excluded. Based on geographical divisions, Global Burden of Disease divides the world into four regions: Asia, Europe, America, and Africa. The analysis show the data for all countries in these four regions of the Global Burden of Disease dataset. Age-adjusted rates were used to compare annual rates from 1990 to 2017, to compensate for the effects of changes in population structure and aging. The Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER) guidelines were used to guide transparent data analysis and reporting. We analyzed selected countries within the Global Burden of Disease's four world regions based upon the prevalence rates and geographical size.

The Statistical Package for the Social Sciences was used for statistical analysis. The time series modeler was used to develop a forecast model using the expert modeler option without any events. The stationary R-square was used to measure the goodness of fit. None of the observed values was marked as outliers.