INDIAN JOURNAL OF ALLIED HEALTH SCIENCE
(IJAHS) Volume 1, Issue 3, Oct-Dec 2025, pp. 8-12

IJAHS PUBLICATION

CLIMATIC CHANGES AND CARDIOVASCULAR DISEASES: WHICH IS VULNERABLE?

Sai Lakshmi. D[1*], Nikhath Thabasum. A[2]

[1]Demonstrator
Department Of Cardiac Care Technology, Dr MGR Educational and Research Institute, Chennai.
Email ID: sailakshmidcct2020k@gmail.com

[2] Demonstrator,
Department Of Cardiac Perfusion Technology, Bhaarath Medical College and Hospital, Chennai

Research Domain: Health Science

Type of the Article: Letter to Editor

Type of Review/ Peer-Reviewers: Peer Reviewed by Asst. Professor: Mrs. Glory mini mol A.

Indexed in: OpenAIRE.

DOI: https://doi.org/10.5281/zenodo.18055153

Received on: 10/11/2025

Published on: 24/12/2025

How to Cite this Paper:
SAI LAKSHMI D, & Nikhath Thabasum. A. (2025). CLIMATIC CHANGES AND CARDIOVASCULAR DISEASES: WHICH IS VULNERABLE?. In INDIAN JOURNAL OF ALLIED HEALTH SCIENCE (Vol. 1, Number 03, pp. 8–12).

TO THE EDITOR,

Cardiovascular diseases are leading factor of death around the world. Climate change is a global issue, but the amount of exposure to climate shifts, poor air quality, and extreme weather events is widely variable and defines each subject's vulnerability. In India there are 36 states which falls under various climatic zones from north to south. The health risks attributed to climate change have been known for decades; yet, climate change has emerged as one of the greatest and most fundamental threats to human health.

In particular, various epidemiological studies have been reported greater coronary heart disease (CHD) and acute myocardial infarction (AMI), valvular heart diseases (VHD) mortality both in winter and in extremely hot summers [1]. People living in densely populated areas in developing countries, in the absence of efficient public infrastructure and services, are more vulnerable to climate change-related events [2].

The latest Intergovernmental Panel on Climate Change report firmly concluded that a wide range of diseases, from vector-borne diseases to non-communicable diseases (NCDs) such as cardiovascular diseases (CVDs), are affected by climate change. Cardiovascular diseases are had also been shown to be climate-sensitive and are affected by environmental risk factors, such as extreme temperature, noise and air pollution [3].

Recent studies shows that more heart attack occurs in late December. The risk of Myocardial infraction (MI) is increased due to exposure to acute cold and rapid temperature change may cause blood vessels to constrict, which raises blood pressure and increases systolic functions.

On other hand valvular heart diseases and other cardiovascular diseases occurs during summer due dehydration which causes blood thickening, electrolytes imbalance and increases workload to the heart. This leads to stroke and arrhythmias. Older adults aged above >60 is more proven to get heart attacks during summer which increases blood pressure which increases dehydration, sweat regulation and aggravation of body temperature [4,5]. Therefore, both heat waves and cold waves carry its own ravage to affect cardiovascular system in low – middle income cities.

Hence, there are few ideas to quell this:

1. Staying in a moderate environment.

2. Dehydration is chiefly complainant in heat waves. Intake of fluid is necessary.

3. Limiting physical activities during summer.

4. Minimizing exposure to extreme cold to reduce strain to CVS

5. Manage stress

6. Limit the intake of food during winter holidays as it leads to obesity and slows down body's physiological process.

Home – grown and medical practiced remedies are there to prevent us from the vulnerability of climatic modifications as follows:

During summer:

1. Consuming water with fancy electrolytes properties to prevent dehydration.
2. Eat light (focus on water rich foods)
3. Seek for cooling properties.
4. Exercise wisely & avoid outdoor activities
5. Regular Monitoring for bp, dizziness and arrythmias
6. Restrain from alcohol and caffeine consumption as it leads to severe dehydration.

During winters:

1. Avoid overexertion on outdoor activities
2. Consuming balanced diet, overconsuming leads to obesity and fat deposition on arteries.
3. Insulating clothing are must.
4. Monitor for seasonal affective disorder (SAD) winter holidays negatively increase mental health which leads to idiopathic causes of hypertension.

REFERENCES:

1. Abrignani MG, Lombardo A, Braschi A, Renda N, Abrignani V. Climatic influences on cardiovascular diseases. World J Cardiol. 2022 Mar 26;14(3):152-169. doi: 10.4330/wjc.v14.i3.152. PMID: 35432772; PMCID: PMC8968453.
2. Kazi DS, Katznelson E, Liu CL, Al-Roub NM, Chaudhary RS, Young DE, McNichol M, Mickley LJ, Kramer DB, Cascio WE, Bernstein AS, Rice MB. Climate Change and Cardiovascular Health: A Systematic Review. JAMA Cardiol. 2024 Aug 1;9(8):748-757. doi: 10.1001/jamacardio.2024.1321. PMID: 38865135; PMCID: PMC11366109.
3. De Vita A, Belmusto A, Di Perna F, Tremamunno S, De Matteis G, Franceschi F, Covino M; CLIMPS Group. The Impact of Climate Change and Extreme Weather Conditions on Cardiovascular Health and Acute Cardiovascular Diseases. J Clin Med. 2024 Jan 28;13(3):759. doi: 10.3390/jcm13030759. PMID: 38337453; PMCID: PMC10856578.
4. Liu J, Varghese BM, Hansen A, Dear K, Driscoll T, Zhang Y, Morgan G, Prescott V, Dolar V, Gourley M, Capon A, Bi P. High temperature and cardiovascular disease in Australia under different climatic, demographic, and adaptive scenarios. Eur Heart J. 2025 May 14;46(19):1852-1862. doi: 10.1093/eurheartj/ehaf117. PMID: 40090366; PMCID: PMC12075934.
5. Shrikhande SS, Lakshmanasamy R, Röösli M, Aqiel Dalvie M, Utzinger J, Cissé G. A review of climate change and cardiovascular diseases in the Indian policy context. Health Policy Plan. 2024 Nov 14;39(10):1109-1124. doi: 10.1093/heapol/czae076. PMID: 39185584; PMCID: PMC11562124.