



Freezing Threats: The Health Implications of Extreme Cold Weather in Pakistan



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Pakistan is a diverse country in terms of climate; however, some of the most extreme cold in Pakistan can be witnessed in the northern areas, such as Hunza, Skardu, Ashkamen Valley, and a section of Baltistan. During January and February, the climate in these regions can be as low as -100 °C, and glaciers like Siachin, Passu, Batura, and Baltoro make sure that the environment is as cold as it can be throughout the entire year. Cold weather is also a natural characteristic of such areas, but it presents significant health issues to the population, both physical and mental [1-3].

Extreme cold has the most direct effect on the health of human beings, especially those who are the most vulnerable. Low temperatures may cause hypothermia, which is a life-threatening condition in which the body is unable to generate heat at a rate faster than it loses it. In northern Pakistan, frostbite is also typical of hands, feet, ears, and the nose, causing tissue damage and amputation in severe cases. Specifically, children, the elderly, and individuals with chronic illnesses are more prone to it because their bodies cannot better control temperature. Unfortunately, not all houses in remote northern parts have proper heating, insulation, and proper clothes that would help people to prevent cold-related diseases [1-4].

There is also a surge of respiratory problems during winter. The cold air irritates the respiratory system, weakens immunity, and thus, makes individuals more susceptible to diseases like influenza, bronchitis, and pneumonia. The frequency of chronic respiratory diseases, including asthma and chronic obstructive pulmonary disease (COPD), also deteriorates during colder seasons as a result of indoor air pollution caused by the burning of wood, coal, or kerosene to heat the home. These indoor fuels emit toxic smoke, further complicating respiratory distress and leading to more and more hospital admissions [3,4].

Cardiovascular health is also influenced by cold weather. Low temperatures make blood vessels narrow, resulting in a rise in blood pressure and heart rate. This increases the chances of heart attacks and strokes, especially among the aged. Research has revealed that there is a seasonal trend in mortality whereby more mortality is registered in winter months owing to cardiac-related complications. Unanticipated cold waves in cities where individuals might be exposed to cold air following the indoor heating also led to cardiovascular crises [5].

The other critical health issue is the increase in winter injuries. Falls and fractures are more likely in the northern areas where roads are slippery and icy. Only inaccessible emergency services in the mountains can postpone the treatment, which deteriorates results. Moreover, cold weather in most cases compels individuals to be at home in a congested area, thus contributing to the transmission of communicable diseases, including tuberculosis, influenza, and even COVID-19 [6].

Mental health is another area impacted by prolonged cold. Reduced daylight hours and extended indoor time may cause seasonal affective disorder (SAD) and depression and anxiety, especially in susceptible groups. Social isolation in remote areas during the winter season increases these mental health issues, and it is highly important to offer community support and mental health services [7].

Cold health impacts in Pakistan should be prevented. Heating homes and other public shelters, supplying warm clothes and

blankets, and educating people on how to take care of themselves on winter days can save lives. Influenza and pneumonia vaccines are to be given priority, particularly to the high-risk groups. Avoidable deaths can be prevented through better access to healthcare in remote northern regions, as well as the emergency response system in severe cold waves. Health risks caused during winter seasons can be further mitigated by fortifying nutrition and educating people regarding healthy indoor heating habits.

Cold weather in Pakistan is not merely a state of the environment, but it is a major issue of public health. Hypothermia and frostbite are not the only consequences of winter on human health, since respiratory and cardiovascular issues can also be significant, especially in the highlands of the north. The solution to these problems is a complex intervention of health, community awareness, and governmental assistance to make sure that the cold is not a threat to death. Focusing on winter health strategies, Pakistan will be able to secure the most vulnerable groups and minimize the impact of cold-related diseases.

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