

A Commentary on Thermal Comfort and Respiratory Infection Risk in Older Adults in the Peruvian Highlands

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Commentary

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DESCRIPTION

The issue of thermal comfort and respiratory infection risk in older adults in the Peruvian highlands is of critical importance, particularly in the high Andean areas located above 3800 meters above sea level. In these regions, temperatures can drop drastically, especially during May to July, with extreme lows reaching as far as -25°C National Meteorology and Hydrology Service (SENAMHI, 2024). These severe climatic conditions are a key factor in the high prevalence of Acute Respiratory Infections (ARI), significantly affecting vulnerable populations such as older adults and children under 5 years of age ^[1].

In the Peruvian highlands, acute respiratory infections are one of the leading causes of morbidity and mortality. According to the Ministry of Health (MINSa), respiratory infections are responsible for a large proportion of deaths among older adults in rural high Andean areas, where extreme temperatures and inadequate infrastructure exacerbate the situation. The scenario is even more critical for children under 5; it is estimated that approximately 2,500 children die each year in rural areas of Peru due to acute respiratory infections triggered by extreme cold (MINSa, 2023) ^[2].

Thermal comfort in homes is a key factor in preventing these diseases. However, poor infrastructure in housing and healthcare centres in the high Andean areas increases the risk of respiratory infections. Traditional homes in these regions, typically constructed with adobe or stone, lack adequate thermal insulation, exposing their inhabitants to extreme temperatures indoors. Additionally, the absence of heating systems in most rural homes worsens the problem.

Given this scenario, it is essential that the government, through its various institutions, implements sustainable strategies to reduce the effects of extreme cold on the health of Andean families.

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One of the most viable solutions is the promotion of homes that meet thermal comfort standards.

These homes should be built using materials native to the region, such as stone and adobe, while integrating thermal insulation techniques and designs that maximize heat retention. Recent research suggests that the use of materials such as alpaca wool or fichu fiber in home construction can significantly improve thermal comfort in rural Andean areas.

Another important strategy is the provision of adequate clothing for extreme cold conditions. The distribution of garments made from alpaca wool, which has excellent thermal properties, can help reduce cold exposure, especially among vulnerable populations such as children and older adults. Moreover, it is imperative to strengthen rural health centers, ensuring rapid and effective care for acute respiratory infections and to improve transportation and communication networks to facilitate access to medical services.

The impact of cold temperatures on the health of highland populations should not be underestimated. Low temperatures not only increase the prevalence of respiratory infections, but they also impose a significant economic burden on the healthcare system. Therefore, a comprehensive intervention that combines improvements in housing, the provision of appropriate clothing and the strengthening of healthcare services is essential to reducing morbidity and mortality associated with cold in the Peruvian highlands [4,2].

CONCLUSION

The challenges of thermal comfort and respiratory infection risks in the Peruvian highlands, particularly among older adults, require a multifaceted approach. The combination of harsh climatic conditions, inadequate housing infrastructure and limited access to healthcare exacerbates the vulnerability of highland communities. To reduce these issues, it is essential for government institutions, non-governmental organizations and community leaders to work collaboratively in promoting sustainable housing solutions, distributing appropriate cold-weather clothing and enhancing healthcare services.

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