

# Exploring Early-life Climate Anomalies and Acute Respiratory Infections in Children Across Sub-Saharan Africa - A Developmental Origins of Health and Disease Perspective

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Acute respiratory infections (ARI) persist as a significant threat, contributing to 15% of under-five deaths globally, with Sub-Saharan Africa (SSA) bearing a disproportionate burden. Climate change compounds this challenge, exerting profound effects on vulnerable populations, particularly children. With escalating frequency of extreme weather events like wildfires, floods, and heat waves, respiratory infections surge through direct and indirect pathways. Yet, the intricate interplay between climate variables and ARI in SSA remains underexplored.

This study delves into the nexus of climate change indicators, specifically temperature and precipitation anomalies, and ARI prevalence among children in SSA. Furthermore, we investigate how ambient air pollution interacts with climate change to exacerbate ARI risk. Additionally, we scrutinize the heterogeneity of climate anomalies' effects on ARI across different climatic regions in SSA. To achieve this, we amalgamate extensive health data from multiple SSA countries with climate, air pollution, and environmental datasets.

Through this multifaceted inquiry, we aspire to illuminate the pivotal determinants shaping the health and well-being of children in SSA. By elucidating these relationships, our research endeavours to enhance our understanding of the challenges and opportunities for safeguarding child health amidst environmental transformations.

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