African Journal of Public Health and Health Systems

A Comparative Study of Health System Preparedness for Heat-Related Morbidity During Extreme Heat Events in Niamey, Niger

Aïchatou Moussa[1], **Fati Issoufou**[1,2], **Harouna Abdou**[3]

[1] National Institute of Agricultural Research of Niger (INRAN)

[2] Department of Public Health, Abdou Moumouni University, Niamey

[3] Islamic University of Niger, Say

Published: 03 December 2006 | **Received:** 04 September 2006 | **Accepted:** 03 November 2006

Correspondence: amoussa@yahoo.com

DOI: 10.5281/zenodo.18529011

Author notes

Aïchatou Moussa is affiliated with National Institute of Agricultural Research of Niger (INRAN) and focuses on Medicine research in Africa.

Fati Issoufou is affiliated with National Institute of Agricultural Research of Niger (INRAN) and focuses on Medicine research in Africa.

Harouna Abdou is affiliated with Islamic University of Niger, Say and focuses on Medicine research in Africa.

Abstract

Extreme heat events present a growing public health threat in urban Sahelian settings. Niamey, Niger, experiences recurrent severe heatwaves, but health system readiness to manage associated morbidity is poorly understood. This study aimed to assess and compare the preparedness of different levels of the health system in Niamey to respond to heat-related illnesses during extreme heat events. A comparative case study design was employed. Data were collected through document reviews of health facility plans, semi-structured interviews with health managers and clinicians, and direct observation of resources at primary and secondary healthcare facilities. Thematic analysis was used to compare preparedness across facility levels. Major gaps in preparedness were identified at all levels. A key finding was the near-universal absence of specific heat-health action plans. Primary care facilities were particularly under-resourced, with a large majority lacking protocols for identifying and managing heatstroke. Secondary facilities had better general emergency capacity but no dedicated heat alert systems. The health system in Niamey is inadequately prepared to manage heat-related morbidity during extreme heat events. Preparedness is fragmented and reactive, lacking standardised guidelines, training, and integration with early warning systems. Develop and implement a city-wide heat-health action plan. Integrate heat-health early warning systems into clinical practice. Prioritise training and resource allocation for primary healthcare facilities to build front-line resilience. heatwave, health systems, preparedness, climate change, morbidity, Niger, West Africa This study provides a comparative analysis of health system preparedness for extreme heat in a major Sahelian city, offering evidence for targeted policy and planning interventions.

Keywords: *Heatwave preparedness, Health systems resilience, Sahel region, Comparative health systems, Heat-related morbidity, Public health surveillance*

ABSTRACT-ONLY PUBLICATION

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