

Project Brief: CHAMNHA (Climate, Heat, and Maternal and Neonatal Health in Africa)

Full Title of Study/Programme	Impact of environmental heat exposure around the time of childbirth on women’s and children’s health: a community and facility-based qualitative inquiry in Burkina Faso and Kenya
Technical Focus Area/Key Words	Climate change, extreme heat, maternal and child health; neonates; sub-Saharan Africa; qualitative research; intervention co-design
Rationale	<p>The frequency and intensity of heat waves have increased in sub-Saharan Africa (SSA) and are set to escalate in the coming decades. Heatwaves and high seasonal temperatures present major health threats, especially for vulnerable population groups, such as those with limited socio-economic resources or compromised physiological ability to respond to heat stress. Pregnant women form one such vulnerable group but recognition of this vulnerability has been slow.</p> <p>Growing evidence (mostly from high-income countries) shows that heat stress affects a wide range of MNH outcomes, resulting in a major disease burden. Heat and aridity are strongly associated with preterm birth and low birth weight. There is further evidence that heat exposure increases the risk of pre-eclampsia and postpartum haemorrhage. Few studies on the impact of heat on MNH have been conducted in sub-Saharan Africa.</p> <p>Women may interpret symptoms of heat stress – such as dehydration in the neonate – and act to relieve these symptoms using culturally specific models of health and illness. There is little evidence on pregnant women’s lived experience of and responses to extreme ambient heat, including how new mothers (and other family members) act to protect newborn babies from heat stress. To design feasible and acceptable heat mitigating health interventions for pregnant and postpartum women and their newborns, we need a better understanding of local explanatory models that are used to explain risk, illness and harm in relation to pregnancy and childbirth.</p>
Primary Objectives	<p>To examine how exposure to extreme heat during pregnancy and in the postpartum is viewed by a range of stakeholders, and the extent to which they view it as a priority for intervention</p> <p>To explore women’s cooling behaviours and general resilience to heat stress</p> <p>To document how women identify discomfort from heat in their neonates, understand their neonate’s fluid and nutritional needs, and formulate strategies to cool them down</p> <p>To investigate how heat stress affects women’s utilisation of antenatal care (ANC) and postnatal care (PNC), and how the</p>

	health system copes with demand during periods of extreme heat To identify community- and facility-based heat-health interventions considered feasible and acceptable by potential beneficiaries and local stakeholders		
Secondary Objectives	N/A		
Primary Endpoint/Outcome	N/A		
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Study Design	The study is qualitative in approach. Data will be collected in two sites in Burkina Faso and two sites in Kenya, through the following activities: In-depth interviews (IDI) Focus group discussions (FGD) Key informant interviews (KII) Observations and temperature monitoring in maternity units of healthcare facilities Co-design workshops with local beneficiaries and stakeholders in MNH and climate services to design an intervention		
Study arms	N/A		
Study population		Burkina Faso (n)	Kenya (n)
	IDIs: Pregnant and postpartum women	40	30
	FGDs: Women ever pregnant	24-48	-
	Elderly female relatives	24-48	24-48
	Male partners	24-48	24-48
	Community Health Volunteers	-	24-48
	KIIs: Community members	10	5-10
HCWs	10	5-10	
Co-design workshops	~100	~100	
Study sample size	See above		
Follow up/duration	No follow-up		
Study/Programme sites	Ouagadougou and Kaya District, Burkina Faso Kilifi County, Kenya		
Study/Programme duration	Jan 2020 – Dec 2021		
Investigators	Fiona Scorgie, Wits RHI Kadidiatou Kadio, Institute de Recherche en Siences de la Santé (IRSS), Burkina Faso Adelaide Lusambili, Aga Khan University, Kenya		
Other Partners & Collaborators	Prof Seni Kouanda, Institute de Recherche en Siences de la Santé (IRSS), Burkina Faso Prof Sari Kovats, London School of Hygiene & Tropical Medicine, United Kingdom Prof Matthew Chersich, Wits RHI, University of the Witwatersrand, South Africa Dr Veronique Filippi, London School of Hygiene & Tropical Medicine, United Kingdom Dr Nathalie Roos, Karolinska Institutet, Sweden		

	<p>Prof Stanley Luchters, Aga Khan University, Kenya Prof Britt Nakstad, University of Oslo, Norway Dr Jeremy Hess, University of Washington, United States Dr John Marsham, University of Leeds, United Kingdom</p>
Sponsors/Donors	The study is funded by The Belmont Forum and channelled via sub-contract to WRHI through LSHTM, UK and Karolinska Institutet, Sweden.
Linked Sub Studies and post grad projects	Linked to epidemiological studies and evaluation of an intervention (all part of larger CHAMNHA project)
Publications/key presentations to date	Roos N, Kovats S, Hajat S, Filippi V, Chersich M, Luchters S, Scorgie F, Nakstad B, Stephansson O, CHAMNHA consortium. 2021. Maternal and newborn health risks of climate change: A call for awareness and global action. <i>Acta Obstetrica et Gynecologica Scandinavica</i> . doi: 10.1111/aogs.14124.
Progress Update as at 04/2021	All data collection complete in Burkina Faso except co-design workshops; all data collection complete in Kenya except KIIs and co-design workshops. Data analysis underway in both sites.
Frequency of donor narrative report	Annual
Overall Study/Project Contact	Dr Fiona Scorgie, fscorgie@wrhi.ac.za
Briefing owner and date	Dr Fiona Scorgie, 14/04/2021