AFRICAN FOOD SYSTEMS RESEARCH (INTERDISCIPLINARY - INCL AGRI/ENV)
Vol. 1 | No. 1 | 2019

# Protocol for a Randomised Controlled Trial of a Mobile Health Behavioural Nudge Intervention to Reduce Dietary Sodium in Hypertensive Adults in Khayelitsha, South Africa

**Lungile van der Merwe**[1], **Thandiwe Nkosi**[1,2]

[1] *University of Cape Town*

[2] *Department of Clinical Research, South African Institute for Medical Research (SAIMR)*

**Correspondence:** lmerwe@aol.com

**Published:** 07 October 2019 **Received:** 11 June 2019

**Accepted:** 09 September 2019 **DOI:** 10.5281/zenodo.18956621

**Author notes**

*Lungile van der Merwe is affiliated with University of Cape Town and focuses on Medicine research in Africa.*
*Thandiwe Nkosi is affiliated with University of Cape Town and focuses on Medicine research in Africa.*

## ABSTRACT

**Background:** Excessive dietary sodium is a major modifiable risk factor for hypertension, a leading cause of morbidity and mortality in South Africa. Urban township populations face specific environmental and socioeconomic barriers to reducing salt intake. Mobile health (mHealth) interventions using behavioural nudges offer a scalable, low-cost strategy, but their effectiveness in this context requires robust evaluation.

**Purpose and objectives:** This protocol describes a randomised controlled trial to assess the effectiveness of a mobile phone-based behavioural nudge intervention, compared to usual care, in reducing dietary sodium intake among hypertensive adults in Khayelitsha. The primary objective is to determine the intervention's effect on 24-hour urinary sodium excretion. Secondary objectives include effects on blood pressure, dietary knowledge, and salt-related behaviours.

**Keywords:** *Hypertension, Sodium Reduction, mHealth, Behavioural Nudge, Randomised Controlled Trial, Sub-Saharan Africa*

### Article Highlights

- Protocol for a two-arm RCT testing mHealth nudges against usual care in 300 hypertensive adults.
- Primary outcome: change in 24-hour urinary sodium excretion after 12 weeks.
- Intervention uses daily SMS and weekly interactive voice messages to promote salt reduction.
- Analysis employs a linear mixed-effects model with intention-to-treat principles.

### Methodological Rigour

The trial design incorporates a single-blind, parallel-group structure with a pre-specified statistical model to quantify the treatment effect on the primary biochemical outcome.

*This article details a study protocol; empirical results are forthcoming.*