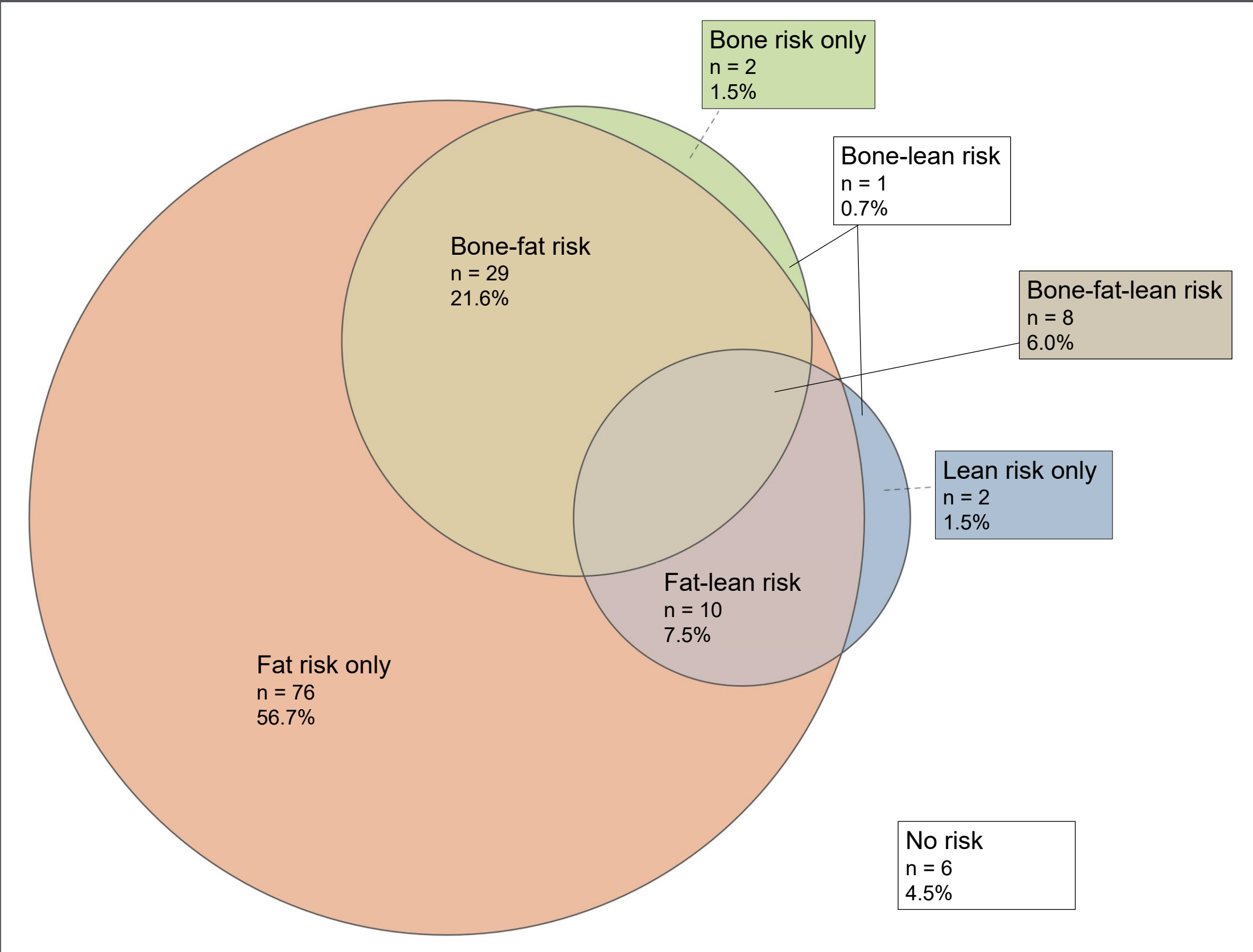


A hidden burden in a healthy workforce: First DXA evidence from the Eastern Cape

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Overlap of bone, fat and lean mass risk (n = 134). Regions are mutually exclusive.
Overall: fat risk 123 (91.8%), bone risk 40 (29.9%), lean risk 21 (15.7%).

A ‘healthy’ workforce can still carry hidden risk.

Among 134 teachers in under-resourced Eastern Cape schools:

- 95% had at least one body composition risk
- 35% had two or more overlapping risks
- 1 in 17 carried all three
- 55% met criteria for metabolic syndrome
- Only 10-25% reported any treatment use

DXA exposed a hidden burden of fat, bone, and lean mass risk in a workforce rarely screened for these conditions.

Introduction

Teachers in under-resourced schools are central to educational continuity and community resilience, yet occupational strain and structural constraints may increase health vulnerabilities.

Silent risks such as excess adiposity, low bone density and reduced lean mass are rarely assessed outside older populations. Across low- and middle-income countries, these risks are increasingly converging, yet African DXA evidence remains scarce — with no previous population data from South Africa’s Eastern Cape Province.

Aim

To generate the first DXA-based body composition dataset among teachers in South Africa’s Eastern Cape Province, quantifying bone, fat and lean mass risks, their overlap, and associations with cardiometabolic health.

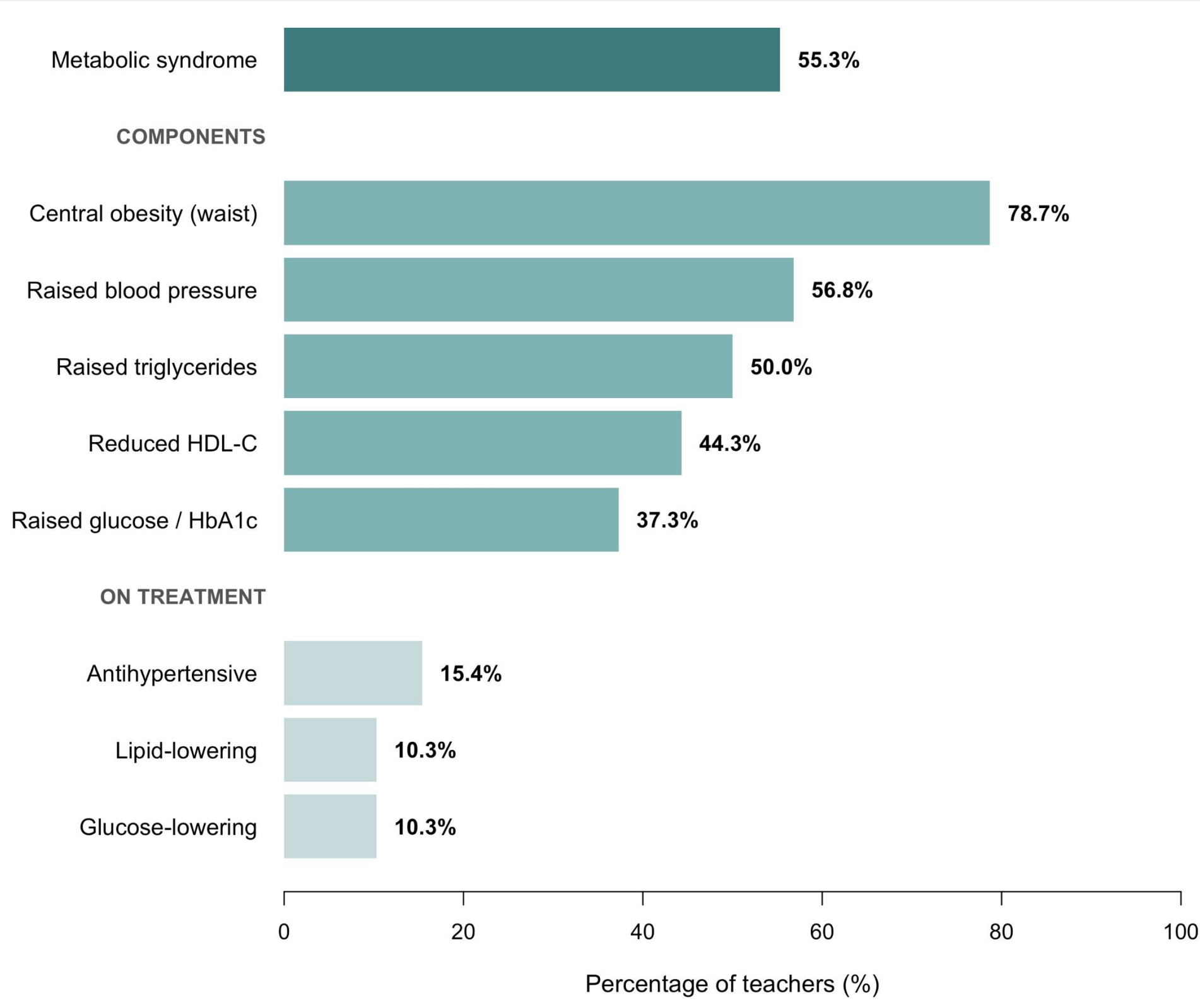
Methods

Cross-sectional baseline data from KaziHealth (May–July 2019), including 134 teachers from 8 under-resourced public primary schools in Gqeberha, South Africa. Whole-body DXA quantified bone, fat and lean mass.

Risk phenotypes were classified using published thresholds and metabolic syndrome followed Joint Interim Statement criteria.

Results

Among 134 teachers (85% women; mean age 47 years), excess adiposity dominated (91.8% DXA-derived fat mass risk), with 35% having ≥2 overlapping body composition risks. Despite substantial cardiometabolic burden, reported treatment remained low (10–25%).



Metabolic syndrome and its components, with reported cardiometabolic medication use.

A substantial, clustered and largely unrecognised health burden exists in a workforce with healthcare access. Coverage alone does not ensure care. We are extending this work to a three-province hypertension care cascade study to identify where treatment pathways fail.

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