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Title: The nutrition transition: nutrient-based patterns over 20 years in African women in South Africa

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Introduction

African women are experiencing a health and nutrition transition, characterised by changes in dietary intakes during urbanisation. Nutrient-based dietary patterns contribute to an understanding of this nutrition transition. The aim is to describe nutrient-based patterns of two similar populations of African women in South Africa, 20 years apart.

Methods:

Data for the analysis were drawn from two independent projects, the Transition and Health during Urbanization study (THUSA), conducted in 1996/1998 in the North-West Province, and the on-going South African Breast Cancer study (SABC) which commenced in Soweto in 2014. To increase comparability, women from urban stratum 4 and 5 from the THUSA study was selected. Nutrient patterns were derived for each study from a quantified food frequency questionnaire. Principle Component Analysis (PCA) was carried out on 26 nutrients.

Results

Four nutrient patterns were retained, explaining 77% and 74.5% of the total variance by the overall PCA in the THUSA (n=279) and SABC (n=209) studies respectively. In both, pattern one explained about 38% of the variance and was characterized with positive loadings on animal protein, cholesterol, and vitamins B12 and D. Both studies depicted patterns characterized with negative loadings on added sugar and positive loadings on vitamin C intakes, explaining 11% and 13.7% for the THUSA and SABC studies

respectively. A third pattern was characterized with positive loadings on vitamins A and C.

Conclusion:

Similar nutrient patterns have been depicted for two urban African female populations 20 years apart. The associations between food and nutrient patterns, health, and lifestyle factors should be investigated.