Contribution ID: **188** Type: **Poster**

Body composition in Gambian women: impact and implications of rural-to-urban migration and the nutrition transition.

The Gambia, West Africa is experiencing various types of transition, including nutritional and epidemiological. Rapid urbanisation and the influence of globalisation are resulting in shifts in diet and lifestyle, with a related rise in NCDs. Yet, the prevalence of micronutrient deficiencies, infectious diseases, and undernutrition is still high. We have investigated whether migrating to an urban environment impacted anthropometry and body composition. This research formed part of a larger study of the impact of migration and nutrition transition on bone health in Gambian women living in rural and urban areas of The Gambia.

Data were collected for two groups of pre-menopausal women aged 35.0 to 50.9 years: urban migrant (n=58) and rural (n=81). Both groups spent their formative years in the same rural setting, and urban women were known to have migrated when aged ≥16 years. Participants had dual energy x-ray absorptiometry (DXA) and peripheral quantitative CT (pQCT) bone and body composition measurements including total lean and fat mass, and regional (android and gynoid) fat mass. Data were also collected on bone phenotype and biochemistry, food and nutrient intakes, physical activity, socio-demographic characteristics, vitamin D status, and 24hr urinary mineral outputs.

There was no significant difference in age between groups. Median age at migration for urban women was 18.5 (16.5 to 21.9) years, with an average 23.8 (18.9 to 28.6) years spent in the urban environment. The groups were of similar height ($p>0.05$). However, urban women were significantly heavier ($p<0.001$): urban 67.7 (55.3 to 79.4) kg and rural 58.3 (51.6 to 67.3) kg, with a between group difference of 13.6%. Difference in weight was attributable to significantly greater fat mass in the urban group: urban 27.0 (18.3 to 35.4) kg and rural 17.4 (13.7 to 23.2) kg, and this was primarily in the android region. Fifty-six percent of urban and 30% of rural women were overweight or obese (BMI ≥25). Of those classified as obese, 7% and 2% (urban and rural respectively) were severely or morbidly obese. Several women were underweight, 11% versus 3% of urban. Dietary data indicated that consumption of fruit and vegetables was lower in the urban group and energy from fat was higher. Differences were reflected in the urban group's higher potential renal acid load.

Overweight and underweight exist in both rural and urban regions of The Gambia, with a higher prevalence of obesity and central adiposity in urban areas. Further work is needed to understand the impacts, implications, and determinants on risk of NCDs, with the aim of developing appropriate interventions for both rural and urban contexts.

Supported by the UK Medical Research Council (MRC) under programmes U105960371 and U123261351. This research is jointly funded by the MRC and the Department for International Development (DFID) under the MRC/DFID Concordat agreement. SD was in receipt of an MRC PhD studentship.

Institution

MRC Elsie Widdowson Laboratory, Cambridge and MRC Unit The Gambia at LSHTM, The Gambia

Country

United Kingdom

Author: Ms DALZELL, Sarah (MRC Elsie Widdowson Laboratory)

Co-authors: Prof. PRENTICE, Ann (MRC Elsie Widdowson Laboratory and MRC Unit The Gambia at LSHTM); Dr GOLDBERG, Gail (MRC Elsie Widdowson Laboratory and MRC Unit The Gambia at LSHTM); Dr WARD, Kate (MRC Elsie Widdowson Laboratory); Dr JARJOU, Landing (MRC Unit The Gambia at LSHTM)

Presenter: Ms DALZELL, Sarah (MRC Elsie Widdowson Laboratory)

Session Classification: Poster Session 7

Track Classification: Epidemiology