

Title: A cross-sectional study of cardio-metabolic disease risk among rural and urban Maasai in Tanzania: A pilot study .

The current trend towards rapid urbanisation, ageing population, rural-urban migration, as well as changes in lifestyle, dietary and physical activity pattern in sub-Saharan African countries including Tanzania, have contributed to an increased prevalence of cardio-metabolic diseases. This puts a significant burden on individual health, population health and the entire health system. Previous researchers have reported that, ethnic origin and exposure to urban environment can influence an individual's risk to cardio-metabolic diseases. Some researchers also summarize that due to a rural protection factor, people in rural areas living strict rural lifestyles have an advantage over those in the urban areas in terms of non-communicable disease risk. In Tanzania specifically, previous research has shown that rural and urban pastoralist-Maasai demonstrated marked differences in their dietary behaviour and cardio-metabolic profile.

Based on this, my study hypothesized that area of residence influences the modifiable risk factors of cardio-metabolic diseases and that cardio-metabolic disease prevalence among the Maasai of Tanzania differ by place of residence. With a quantitative study design, this study assessed the association between area of residence and cardio-metabolic risk differences among rural and urban Maasai of Tanzania. In total 76 participants aged 18 years and above were recruited for the study. Out of the total number, 41 and 35 were men and women respectively. A linear regression and analysis of variance were conducted to both assess; the association and find out if there are any relevant differences, between rural and urban resident Maasai in connection to their risks to diseases.

At the end of the study, five key conclusions were drawn from the findings of this study. Firstly, diabetes mellitus was found to be prevalent in the urban area (6.1%) but not in the rural area. Coupled with this, overweight was found to be more prevalent (28.6%) among urban Maasai whereas underweight was more prevalent (22%) among rural Maasai. Additionally, high blood pressure was prevalent among the two groups with no significant difference found between urban and rural Maasai ($p= 0.257$ and 0.146 for diastolic and systolic BP respectively). The overall prevalence of hypertensive systolic and diastolic BP found in this study was 15% and 20% respectively. The study has also shown that percentage of total body fat was higher among urban Maasai notably among urban Maasai women.

Finally, the study found that haemoglobin level was low among especially rural Maasai women. The findings of this pilot study provide a foundation for a thorough investigation into the association between area of residence and cardio-metabolic diseases risk among the Maasai of Tanzania and other ethnic groups in sub-Saharan Africa.

This study has contributed to the knowledge and understanding of what is at stake for urban planners and public health officials in Tanzania and sub-Saharan Africa in general as this region has been shown to bear a greater burden of the cardio-metabolic disease and is projected to bear even worse in the next few decades. By showing the link between the area of residence and its association to cardio-metabolic diseases among the Maasai, health officials may find the results of this study useful as it provides evidence, based on which they can design health promotional programmes, policies and strategies in order to reduce the health inequality gap that exist between the rural and urban population especially high cardio-metabolic disease risk among the urban poor.

On a wider perspective this study sheds light on: the role of urbanisation and rural to urban migration on the cardio-metabolic diseases risks among the rural and urban Maasai of Tanzania. The result shown can be of relevance to future researchers and epidemiologist in the moment of a continuous trend in rural to urban migration, rapid urbanisation in sub-Saharan Africa with its attendance changes in dietary and physical activity patterns.

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