Can low dietary zinc intake and mycotoxin exposure explain the stunting pattern in Rwandese children?

INTRODUCTION

Stunting is a major problem affecting a country’s economic and social productivity. Stunting is a multifactorial problem and its causes range from poor quality of foods, poor home environment, poor food and water safety, inadequate breastfeeding practices and infection.

PROBLEM STATEMENT

In Rwanda, stunting prevalence amounts to 38% among children aged less than 5 years. The Northern and Western regions of Rwanda are the most affected by high levels of stunting (figure 1).

In the worldwide ranking of countries with high risk of zinc deficiency, Rwanda was ranked 11 out of 182 countries by descending risk of zinc deficiency (Wessells and Brown 2012). Although the government of Rwanda has taken the stunting problem seriously, little is known on the effect of inadequate dietary zinc intake on stunting in children. On the other hand, extensive research has also shown the negative effect of mycotoxins exposure on linear growth in children; however such study has not yet been conducted in Rwanda.

With the fact that both the zinc and mycotoxin content of foods is influenced by specific environmental factors, this research aims to analyse the determinants of stunting in Rwandese children.

It is hypothesized that low dietary zinc intake and mycotoxins exposure from complementary foods lead to stunting in children aged 6-24 months.

METHODOLOGY

Research conceptual framework: this framework was adapted from the WHO conceptual framework on child stunting (Stewart, Iannotti et al. 2013)

Methods: The first phase of data collection was done in Musanze District in the Northern Province of Rwanda. Through cluster random sampling, 145 households with children aged between 6-24m onths were included in the study. This age range is known to be most affected by stunting. The methodology followed is outlined below:

Data analysis (ongoing): As data analysis for the first phase is ongoing, the association between stunting and dietary zinc intake and mycotoxin exposure will be studied using SPSS as a statistical tool.

In the forthcoming phase of the research, spatial modelling using GIS will be done in order to upscale the analysis to the national level whereby stunting hotspots in Rwanda will be modelled and predicted.

REFERENCES


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