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Topic: The first 1000 days, infant feeding, and early childhood development

Title: Effect of mycotoxin exposure on anthropometric measures of infants 0-6 months old living in rural areas of Eastern Cape Province, South Africa – PhilaSana Project

Presentation Type: Oral

Introduction Chronic and acute malnutrition are prevalent in South Africa, especially in rural areas where residents are subsistence farmers. Home-grown maize from rural areas in the Eastern Cape Province is known to be contaminated with high levels of fumonisin (FB) and Deoxynevelanol (DON). Both mycotoxins have recently been associated with poor infant growth. Although infants 0-6 months should be exclusively breastfed, most infants in this area receive complimentary food at an early age.

Methods Infants 0-6 months were recruited with snowball sampling in rural areas of the Eastern Cape Province. Written informed consent was obtained from mothers/caregivers in their first language. Habitual maize intake was determined with a cultural specific infant food frequency questionnaire and converted to raw intakes. Mycotoxin exposure was calculated by multiplying contamination levels of raw maize with raw maize intake divided by weight. Anthropometric measures including length, weight, head circumference and mid upper arm circumference were taken. World Health Organization growth measures were used to determine infant growth patterns.

Results A total of 79 infants, 42 (53%) females and 37 (47%) males were included. Of these, 66 (84%) were receiving complimentary food. Spearman correlation coefficients ranged between $r = 0.02$ (weight-for-height z-score) and $r = 0.37$ (weight). Correlations were significant ($P \leq 0.05$) between mycotoxin exposure and weight, height, head circumference as well as mid upper arm circumference.

Conclusion Results indicate an association between mycotoxin exposure and various growth parameters. This may contribute to the high levels of stunting and wasting prevalent in the area.