



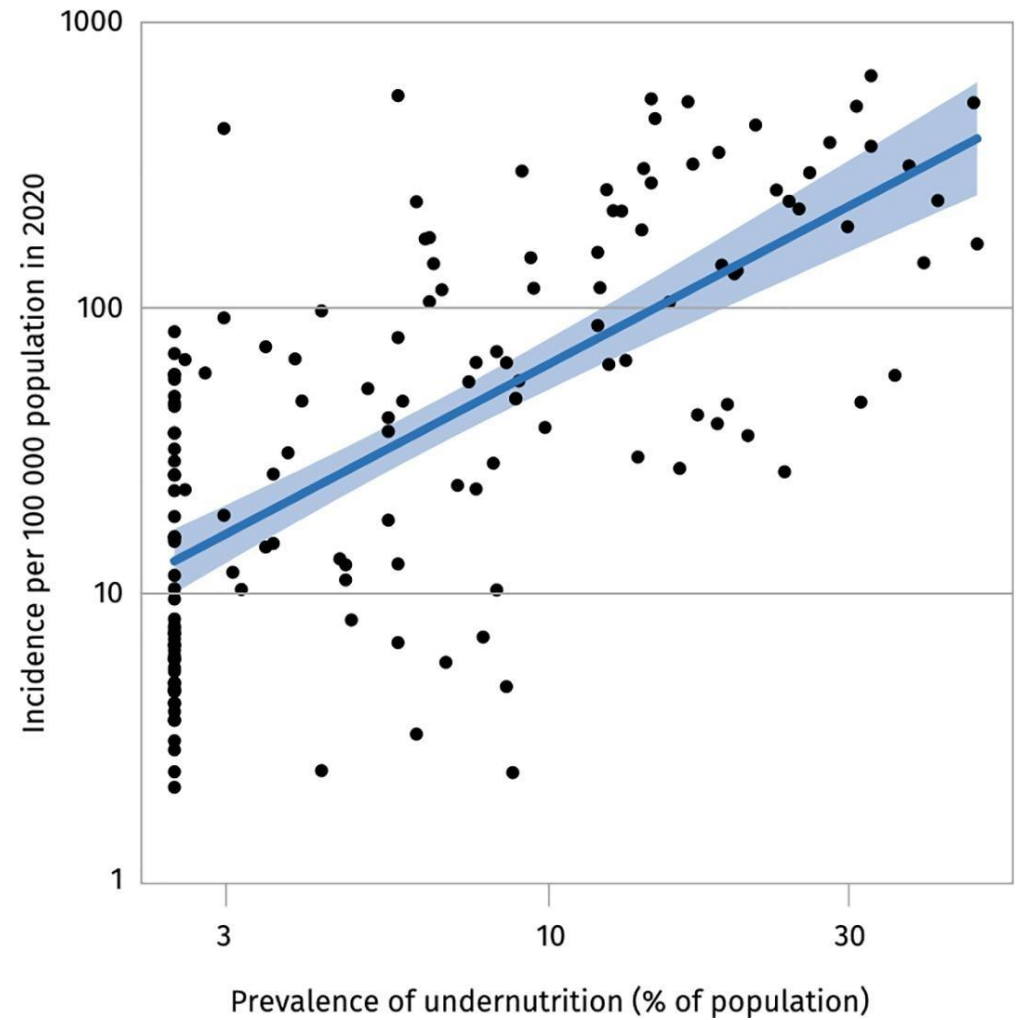
Longitudinal Food Insecurity and Nutritional Status Among Children with Respiratory Illness and Tuberculosis in Cape Town, South Africa



Margaret Van Niekerk

Background

- Undernutrition leading global determinant of TB – WHO TB Global Report 2025
- In 2024 -**10 million** individuals fell ill with TB; **11%** were children



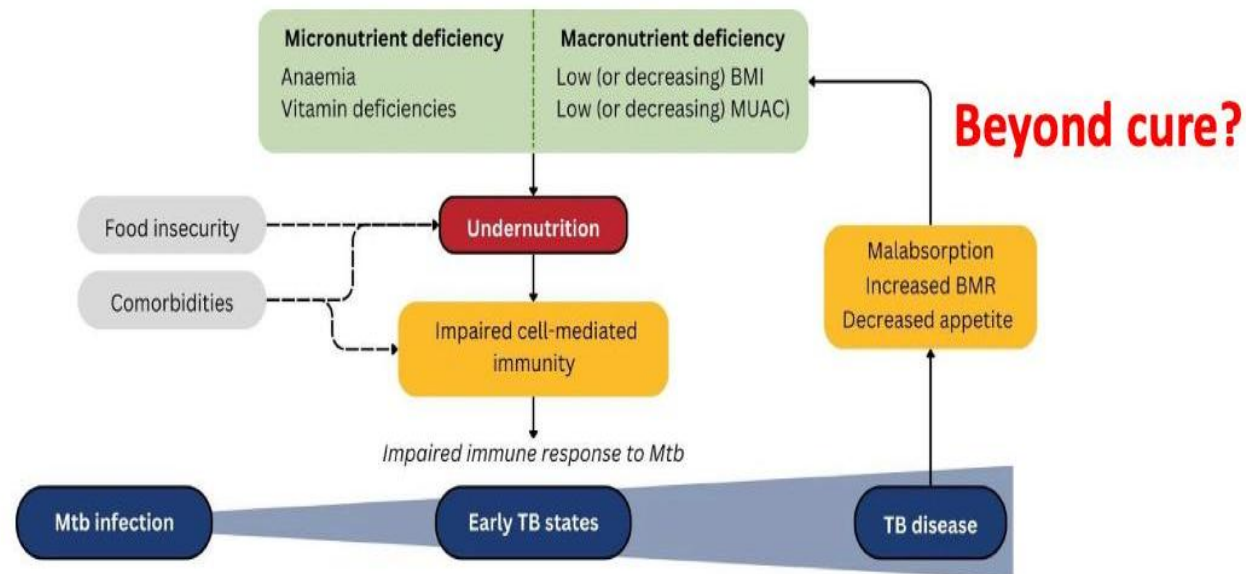
Undernutrition – Food insecurity - TB

Nutrition and TB – a bidirectional relationship

TB and respiratory illness are associated with poor nutritional outcomes

Food insecurity key driver of undernutrition

Household food insecurity may contribute to poor recovery.





Overview on child health and nutrition

Globally

- Dietary diversity (6-23 months) – low-nutrient diets
- 1 in 5 children live in extreme poverty

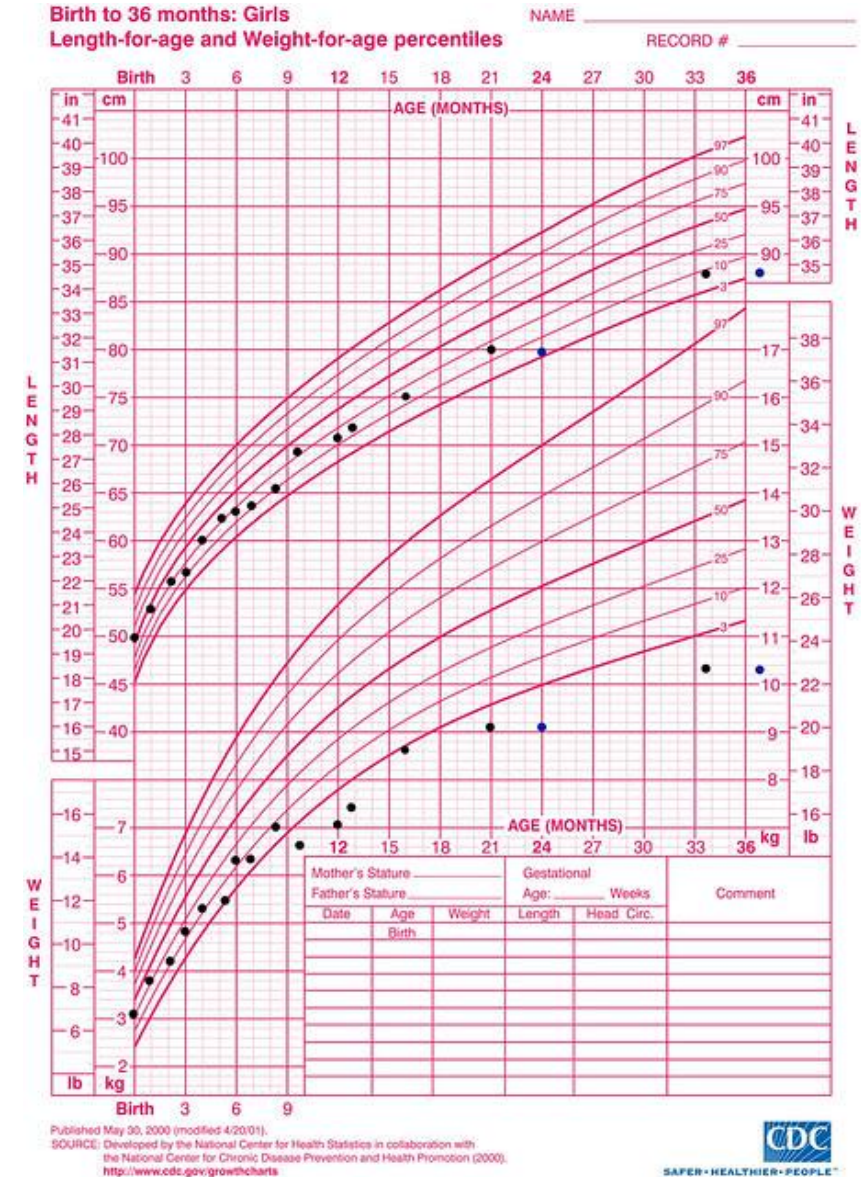
Globally 150 million children are chronically malnourished –
Food insecurity a key driver

Hunger is rising in Africa

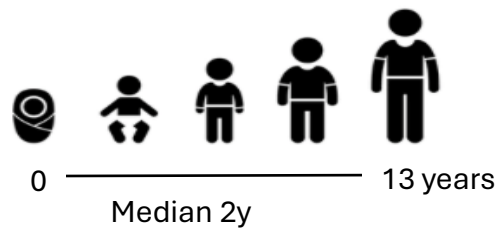
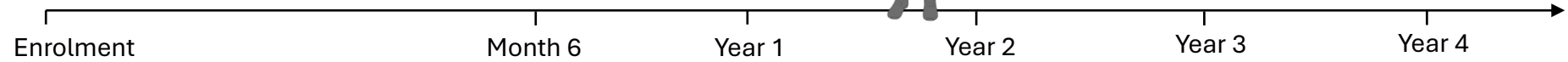
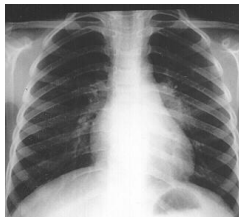
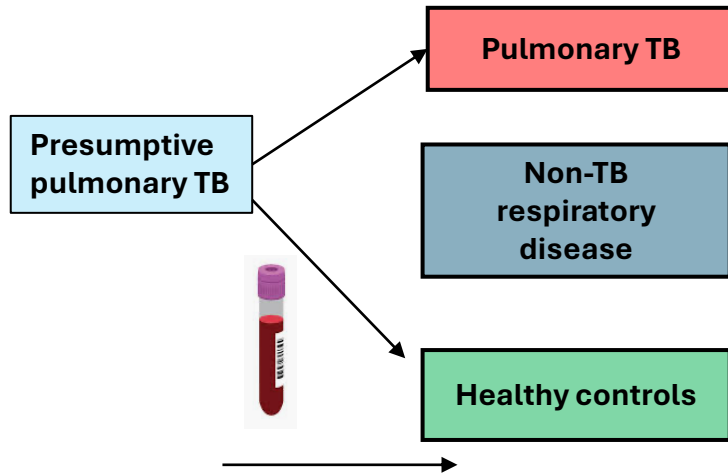
- 2.3 billion people experienced moderate or severe food insecurity in 2024 (SA 63.5% of households are food insecure)
- 1 in 3 family members go to bed hungry - perspective
- Wars; global economic instability; covid-19 pandemic – impacts Food insecurity
- Food inflation – reached all time high in May 2023 (30% increase)
- New analysis shows a direct link between increase in food prices and acute malnutrition

Aim and Objective

- To describe longitudinal patterns of household food insecurity and examine associations between food insecurity and nutritional status among children with tuberculosis and respiratory illness.
- Describe longitudinal food insecurity and its association with nutritional status



Established Cohort



8% living with HIV
20% HIV exposed uninfected

Longitudinal lung health; physical growth; food insecurity
assessment

Methodology

- Visit timepoints: Baseline, and annually to 4 years.
- Food insecurity scale questions: (1) worrying about food running out and (2) children going to bed hungry.
- Dietary intake of fruit, vegetables, and meat was recorded using simple frequency questions(no reporting).
- Anthropometry weight; height converted to z-scores
- Z-scores compared across diagnostic groups and levels of food insecurity-ANOVA and t-tests.



Cohort characteristics

Categories	Frequency (n)	Percentages (%)
Total Children	612	100
Confirmed TB	107	17.5
Unconfirmed TB	183	30
Other resp illness	285	47
Healthy controls	37	6

Food Insecurity prevalence during follow-up

Percentage of households reporting food insecurity among respondents at each study visit.



Percentages calculated among participants who completed food insecurity questionnaires at each visit.

Food insecurity and nutritional status

Food insecurity indicator	Mean WAZ	Mean WHZ	p-value
No food worry	-0.63	0.01	
Food worry	-0.90	-0.26	<0.001
No hunger	-0.70	-0.06	
Hunger	-1.14	-0.52	<0.001

Nutritional status by diagnostic group

Diagnostic group	Mean WAZ	Mean WHZ
Healthy controls	-0.37	-0.33
Confirmed TB	-0.94	-0.21
Unconfirmed TB	-0.75	0.00
Unlikely TB	-0.80	-0.14

Discussion

- Key finding 1: Food insecurity is common
- Key finding 2: Food insecurity was persistent
- Key finding 3: Food insecurity was associated with poor growth
- Raises concerns of post TB recovery in children

Conclusion

- While causality cannot be inferred from these descriptive analyses, the observed associations suggest that household food insecurity may represent an important barrier to nutritional recovery and healthy growth
- These findings highlight the importance of considering social and household factors alongside clinical management when caring for children affected by TB and respiratory illness.”

Future Work/Next steps

- Initial/pre-liminary analysis
- Next steps: Deep dive; adapt current methodology to include full tools – add qualitative components
- Longitudinal growth trajectory modelling will evaluate the impact of food insecurity on anthropometric recovery over time.
- Forms objective 4 of my PhD
- Other objectives includes: scoping review looking at Nutrition and TB; early feeding practices and development of TB; biomarker testing; in-depth interviews with caregivers regarding feeding practices and insight into food as a means for recovery



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EDCTP



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Thank you