

## Diet, Environment, and Choices of Positive Living (DECIDE study): Evaluating Personal and External Food Environment Influences on Diets Among PLHIV and Families in Dar es Salaam, Tanzania

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### Key Takeaways

- While families tried to accommodate food preferences and nutritional needs of people living with HIV (PLHIV), price was the most important consideration for the household's food choices.
- Families often substituted beans and vegetables for more expensive meat; when they had cash available, families would purchase meat and soda.
- Semi/Informal vendors were the main source of fresh produce and also sold a variety of processed foods.
- Vegetables, especially green leafy vegetables, were primarily sold by women food vendors, and thus were an important source of livelihood for women in the urban food environment.
- Due to widespread concerns about food safety, including exposure to agrochemical residue and sewage, consumers chose to purchase food from vendors with whom they had an existing relationship and whose products were perceived as safe.
- Food environment interventions and policies in urban areas must address the effects of time poverty due to demanding household and work schedules, as well as the availability and affordability of nutritious diets.

### Objectives

The overall project objective was to explore and characterize the food environment, dietary adequacy, and drivers of food choice among people living with HIV (PLHIV) and their families in urban Dar es Salaam, Tanzania.

### Background

Human immunodeficiency virus (HIV) infection continues to be a public health priority, particularly in Africa, as it continues to burden both the food and health systems of the region, where more than 50% of PLHIV reside. Current estimates indicate over a one-third of the PLHIV population in Africa are food insecure. Gender roles affect food choices for PLHIV, as women are primarily held responsible for caregiving and maintenance of daily household operations, including making food decisions. Caregivers face numerous challenges in providing care for family members who suffer from chronic illnesses such as HIV. Therefore, it is important to identify and describe the dynamics of food choice decision-making among families of PLHIV.

### Methods

DECIDE study used multiple-methods research using qualitative, geo-spatial, and quantitative study designs. First, qualitative evidence synthesis was conducted looking at drivers of food choice among PLHIV. Giddens' structuration theory was used to identify food choice by examining the interplay between food culture structured by family and traditions, and individual agency in decision-making given social structures. Second, qualitative interviews with 20 PLHIV and 20 family members were used to describe how gender and caretaking relate to the various dimensions of their food environment (FE), and how this influenced food choices. Third, FE census survey mapping the locations of 6,627 vendors was conducted. Geospatial data were collected on all food vendors (including formal and informal food vendors) along with household location to profile household food environment and quantify effect of FE on household food purchasing patterns, dietary intake and nutritional status. Fourth, two waves of household surveys were used to collect data on the dietary intake of PLHIV (n=321) and their families (n=214). A tablet-based

24-hour dietary recall was developed to quantify dietary intake and nutrient adequacy ratios among PLHIV and their families. The team linked this dietary intake data to Tanzanian and Kenyan food composition data to estimate nutrient adequacy ratios. Lastly, team also conducted a methodological geospatial survey to assess spatial and temporal variations in the FE.

## Results

The majority of food vendors in the food environment were semi-formal (44%) and informal vendors (17%). Fresh produce was mostly sold by semi-formal and informal vendors, while meat, grains, and legumes were sold by formal vendors. Over 90% of green leafy vegetables were sold by women, reflecting their role in providing access to nutritious food while optimizing livelihood presented opportunities to stabilize urban food security. With respect to household dietary intake, over half of households reported buying produce every day in the week along with packaged snacks and sodas. Household purchases of energy dense foods (rice, sugar, maize) and animal source foods (meat, fish) were positively associated with body mass index and waist-to-hip ratios, while the purchase of fruits and vegetables (watermelon, bananas, green beans) was negatively associated with nutritional status. Greater density of vegetable and green leafy vegetable vendors within 500 meters of a household significantly increased the likelihood

of purchasing vegetables in the last week and was significant associated with lower overall energy intake among PLHIV.

The study found that approximately 30% of PLHIV reported at least one member of the household with a chronic disease. Over 60% of participants from the qualitative part of the study discussed concerns about food safety, particularly agrochemicals in green leafy vegetables and microbial concerns with prepared foods and juices. PLHIV food choices were shaped by satiety, medical advice, and social identity. At the family level, male PLHIV and caregivers were less aware of their own and family members' food preferences, while longer-term caregivers were more cognizant. Time is a major constraint for the urban poor, and this has altered food choices towards highly processed convenience foods or pre-prepared foods. Water insecurity and the cooking fuel is also affected the food choices towards buying semi-prepared foods since less resources (water, charcoal/gas) were required to prepare food. In summary, DECIDE study highlights drivers of food choice at external (built environment, prices, healthcare, urbanization, seasonality), community (food safety, gender norms, social network, market locations, social/religious identity), family (adorability, co-morbidity, family composition, knowledge, preferences, livelihood, intra-household allocation, time burden) and individual level (disease condition, tie, and work schedule, medical treatment).

## More Information

- “Understanding drivers of food choice in changing food environments of low- and middle-income countries to inform program and policy” By Blake CE, Constantinides S, Turner C, Warren A, Ambikapathi R, Holdsworth M, Laar A, Sellen D, Frongillo E. 5th Agriculture, Nutrition & Health (ANH) Academy Week Learning Lab, June 24, 2020.  
[https://www.youtube.com/watch?v=JO7Pbth5baw&feature=emb\\_logo](https://www.youtube.com/watch?v=JO7Pbth5baw&feature=emb_logo)
- “I have doubts”: Adult perspectives on food safety in peri-urban Tanzania By Patil C, Ambikapathi R, Gunaratna N, Killewo J, Leyna G, Sando M, Shemdoo A, Mosha D, Boncyk M, Froese S, Edwards C, Mangara A, Nyamsangia S, Kazonda P, Lackings B, Fawzi W. 5th Agriculture, Nutrition & Health (ANH) Academy Week, June 30 – July 2, 2020.  
<https://www.youtube.com/watch?v=Ml7LSmvaqdU&feature=youtu.be>
- “How does the food environment influence household food purchase patterns and nutritional status? Empirical evidence from food vendor mapping in peri-urban Dar es Salaam, Tanzania.” By Ambikapathi R, Gunaratna N, Shively G, Killewo J, Leyna G, Mwanyika-Sando M, Mosha D, Boncyk M, Froese S, Edwards C, Mangara A, Kazonda P, Patil C. 5th Agriculture, Nutrition & Health (ANH) Academy Week, June 30 – July 2, 2020.  
<https://www.youtube.com/watch?v=4xsefp4sxqk&feature=youtu.be>
- **Project Page** - <https://driversoffoodchoice.org/research/project-descriptions/decide-study/>

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