

## Urban food purchases, diets, and environment: Validation of a new food purchase pattern tool with dietary intake from the DECIDE study in peri-urban Tanzania

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## Background Results The most frequently The top 5 most purchased items were: Urban populations rely on food purchasing as their main strategy for procuring food.<sup>1</sup> <u>°</u>` purchased items were: Food purchases can constitute over 73% of all household expenditures in Tanzania. 49 food item (62%) Carrots Rice Polished Sugar Among people living with HIV (PLHIV), nutritional status is a determinant of incidence and Tomatoes Carrots (62%) (51%) (50%) maize flour (57%) severity of HIV-related infections.<sup>3</sup> (5 days/week) (4 days/week) purchase survey (48%) Food purchase patterns can be used to study changing consumer preferences and diets, evaluate # # AN 0 interventions, and estimate nutritional status.4 A A 101 Gap: Very few studies have looked at how food purchase patterns are associated with diets<sup>5</sup> and micronutrient adequacy, especially among low-income households. Overall, most participants bought food in the last 7 days in rounds 1 and 2 (85%, 81%, respectively). 6 food groups **Research Aims** 1 Most purchased food groups in rounds 1 and 2: Vegetables (70%) 69%, respectively) and staples (66%, 68%, respectively). 1. Examine household food purchasing trends across two time points among 2 Most frequently purchased food group in both rounds: Vegetables (3 [2, 4] times per week, median [IQR] for rounds 1 and 2). people living with HIV (PLHIV) in peri-urban Dar es Salaam, Tanzania. 3 new metrics of 3 Food group with the highest within-group variety: Vegetables (3 2. Develop and validate food purchasing metrics with dietary and nutrient food purchase [1, 5], 3 [1, 4] items per week, median [IQR] for rounds 1 and 2, intake. respectively). 3. Examine shopping patterns based on food purchasing. Purchase of Variety of meat purchased Validate with dietary staples micronutrient adequacy Methods The proportion of participants achieving O Calcium Data minimum micronutrient adequacy in round1 was T Zinc Quantitative data from 288 PLHIV collected at two time points as part of the Diet, Environment, 1 high for zinc (78%), and Choices of positive living (DECIDE) study that took place in one community in peri-urban Dar but *low* for iron (48%), vitamin A (35%), and es Salaam, Tanzania: Iror calcium (27%). > Round 1: March-June 2019; Round 2: October 2019-February 2020 24-hour dietary recall collected at both rounds and recommended nutrient intakes (RNI) ٠ Purchase of staples + + odds of Vitamin A estimated.6 zinc adequacy. Data collected about 49 selected food items purchased in the last 7 days and frequency of Purchase variety of meat + 1 odds purchase following.7 0.5 1 1.5 2 0 0.5 1 1.5 of adequacy of zinc, iron, and vitamin A. Increased Decreased Increased Analytical Approach Odds of Nutrient Adequacy Latent class models to ek, how many times did you buy the following types of food [to be eaten by household members] and where did Validate with dietary micronutrient adequacy examine patterns O r of times the item was bought in ent during the past week. If the umber es the i Using Latent Class Patterns of Buying in Class Membership was Associated with Last 7 Days, 3 Types of Shoppers Emerged **Micronutrient Adequacy** 49 food item Class 1: "Buy SSB Weekly" (29% of the participants) purchase survey B. Frequen Purchased very little weekly other than O Calcium 6 sweet and sugary Zinc beverages. Iron Class membership Vitamin A Δ 5. Sugar-sweetened 1. Dairy 6. Vegetables zinc and iron 3. Fruit 6 food beverages (SSBs) period (predicted) adequacies groups 2. Flesh 4. Staples Class 2: "Buy Basics" (21% of the participants) foods O Calcium Purchased staples and vegetables 1. Purchase: Purchased a food group in the last 7 days? 3 new Zinc weekly. (proportion) last 7-day Class membership - J odds metrics of Iron Frequency: Average frequency of purchase across all of zinc and iron adequacies. food items within a food group (0-7) Δ Vitamin A purchase 3. Variety: Number of different types of food items puving purchased within a food group Class 3: "Buy Everything" (50% of the participants) Latent class Validate with dietary Validate with dietary Purchased staples, flesh foods, models to O Calcium micronutrient adequacy vegetables, fruits, and SSB micronutrient adequacy examine patterns Zinc weekly Iron Class membership was not associated with micronutrient Δ Vitamin Δ References adequacies. flesh toods Fruits \*Statistically significant Battersby, J. & V. Watson. Nat. Sustain., 2018. 1(4): p. 153-155. Muhammad, A. et al. TB-1929. U.S. Dept. of Agriculture, Econ. Res. Serv. March 2011. Revised Feb. 2013. 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Oairy 1e8: 0 0.5 1 1.5 2 All models adjusted for wealth, education, gender, age, ARV Increased Odds of Nutrient Adequacy adherence, land ownership Key Findings and Limitations Limitations and Future Work: Food purchases can be used to construct simple metrics that relate to This tool did not collect information on quantity of food purchased, detailed food expenditures (data was collected micronutrient adequacy while also on expenditures the previous day), household size, variety of within food group items, cooked food, and food was describing interaction with the food environment and changing consumer consumed away from home. preferences and diets. A food purchase ٠ Preliminary analyses have been conducted to explore food purchase patterns by food security status, and we plan survey is easy to administer and can be to explore this further. done over the phone (with validation). ٠ A future version of the tool could be adapted to collect information on food consumed away from home. **Acknowledgements** The Diet, Environment, and Choices of positive living (DECIDE study) is a collaborative project led by the Purdue University, University of Illinois Chicago, Muhimbili University, and Africa Academy of Public Health. We acknowledge and are grateful for the collaboration & support of the DECIDE study families. The DECIDE study is funded by the Drivers of Food Choice (DFC) Competitive Grants Program.

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