

Opportunities to Improve Nutrition through Urban Gardens Program Activities in Ethiopia: Summary Report of Current Practices from Qualitative and Quantitative Research Studies

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Infant & Young Child Nutrition Project



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Introduction

The US Agency for International Development (USAID)–funded Urban Gardens Program (UGP) targets HIV-affected women and children living in urban areas of Addis Ababa, Adama, and other cities in Ethiopia. The project provides training and assistance to establish community and school gardens in which orphans and vulnerable children and their caregivers have plots that allow them to produce vegetables for their own consumption, as well as to sell for increasing household income. One of the objectives of the project is to improve nutritional status. The project operates through a set of implementing partners—local nongovernmental organizations that provide services to HIV/AIDS-affected people in these areas. The implementing partners hire agricultural extension officers and community mobilizers to organize and support the participant groups, provide training in gardening, and implement other activities that will contribute to achieving nutrition outcomes and other program objectives.

The USAID-funded Infant & Young Child Nutrition (IYCN) Project is collaborating with, and supporting the UGP in strengthening its nutrition activities. As a first step, the IYCN Project designed and implemented qualitative research to help fill some of the gaps in information on current nutrition practices among the UGP participants in these urban areas. Part of the process of developing the qualitative research entailed reviewing and assessing readily available quantitative and qualitative information on infant and young child feeding practices. In addition, the IYCN Project assisted in the development of the nutrition section of a UGP baseline survey implemented in May 2011 among relatively new UGP participants.

The new qualitative research activities included: a set of recipe trials linked to focus group discussions implemented among active UGP participants, and a set of household visits in UGP communities—the first stage of a “Trials of Improved Practices” research project aimed at exploring complementary feeding practices in Ethiopia. The recipe trials/focus group discussions were implemented with a sample of established gardeners who had been in the UGP for at least a year, and whose gardens were successful/yielding vegetables. The household visits were made in the UGP areas but included both households participating in the UGP, as well as other households in the same area since the sample needed for the Trials of Improved Practices research targeted only households with children under the age of two years. The May 2011 baseline survey included questions about food consumption and related nutrition and health practices. Separate reports are available on the results of these qualitative research activities and the baseline survey.^{1,2}

The purpose of this report is to compile the findings and conclusions across the various qualitative studies and available quantitative information to begin to create a more detailed picture of the nutrition situation in these urban areas and among this population. Specifically, the intent is to identify what is known about nutrition and related practices and to begin to identify some of the motivations and challenges to improving nutrition behaviors. This information will provide a foundation for developing an enhanced nutrition education strategy for the UGP.

¹ Infant & Young Child Nutrition (IYCN) Project. *Ethiopia Urban Gardens Program—2011 Baseline Data: Summary and Analysis of Responses to Nutrition Questions*. Washington, DC: IYCN; 2011.

² Infant & Young Child Nutrition (IYCN) Project. *Integration of Nutrition Education into the Ethiopia Urban Gardens Program: Results of Recipe Trials and Focus Group Discussions*. Washington, DC: IYCN; 2011.

Overview of family meal patterns and dietary diversity

New gardeners: The baseline survey of newly entering gardeners found that a little more than half (57 percent) of households consumed three meals per day; five percent of respondents reporting eating only once per day. Overall sample households showed remarkably little diversity in their diets. Only about 10 percent of households met either the minimum cut-off for diversity—i.e., consuming foods from four different food groups—or more than four food groups in the previous day. One-fifth of the sample only consumed foods from one food group in the day before the survey. The majority of the sample households consumed foods from two (41.6 percent) or three (25.6 percent) food groups.

Household visits to UGP areas: The visits to households in the same areas in which the UGP operates showed a slightly different picture—perhaps a reflection of the fact that the UGP is targeting the poorest and most vulnerable in these areas. Only 38 percent of the households visited were participating in the UGP; about two-thirds were not participants. All families among the households visited reported having three meals per day. The amount of diversity in the diet among this study population was also quite limited, although not to the same degree as the UGP participants. About two-fifths (39 percent) of the households [compared to 10 percent of UGP households] visited met the criteria for minimum diversity (four or more food groups consumed daily); one-third (31.5 percent) of households were found to be consuming four food groups, and 8 percent were found to be consuming five food groups per day. The other three-fifths of the sample (61 percent) had less than the minimum diversity: 31.5 percent consuming three food groups and 29 percent of households only consuming two food groups.

National-level quantitative data: Very little diversity in diets throughout Ethiopia is confirmed through national-level data on the proportion of children (6–23 months) who consume the minimum number of food groups and the mean number of food groups consumed by mothers. Compared to other African countries Ethiopia ranks lowest on this measure.

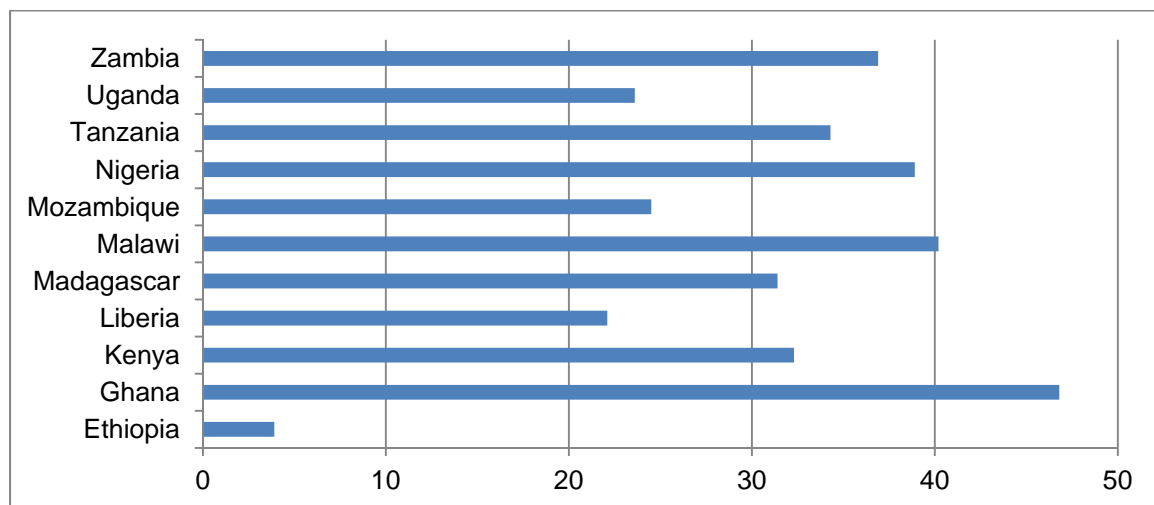


Figure 1: Percentage of children (6–23 months) consuming four or more food groups by country (Source: Kothari M, Nouredine A. *Nutrition Update 2010*. Calverton, Maryland: ICF Macro; 2010)

Country (survey date)	Mean number of food groups (0–9)
Ethiopia (2005)	2.2
Ghana (2008)	4.0
Liberia (2007)	3.5
Nigeria (2008)	3.8
Uganda (2006)	2.9
Zambia (2007)	3.4

Figure 2: Mean Number of Food Groups Consumed by Women in Africa (Source: Kothari M, Noureddine A. *Nutrition Update 2010*. Calverton, Maryland: ICF Macro; 2010)

Types of foods consumed by households

Staple foods: Both survey and qualitative data confirmed that all households in this area consumed a similar diet based on *shiro* (roasted pea flour) and *injera* (flatbread made from *teff*) as the primary staple foods. The baseline survey showed that almost 100 percent of the sample UGP households consumed foods from the cereal group (*injera*), while almost half consumed beans, lentils, or peas (*shiro*). The 24-hour recall information gathered through the household visits in the UGP areas provided more specific information on the types of foods frequently consumed by the households over the course of the day, confirming the almost universal consumption of *injera* and frequent consumption of *shiro*.

Injera is consumed at all three meals although less frequently at breakfast; about a third (34.2 percent) of households had only bread with tea for breakfast.

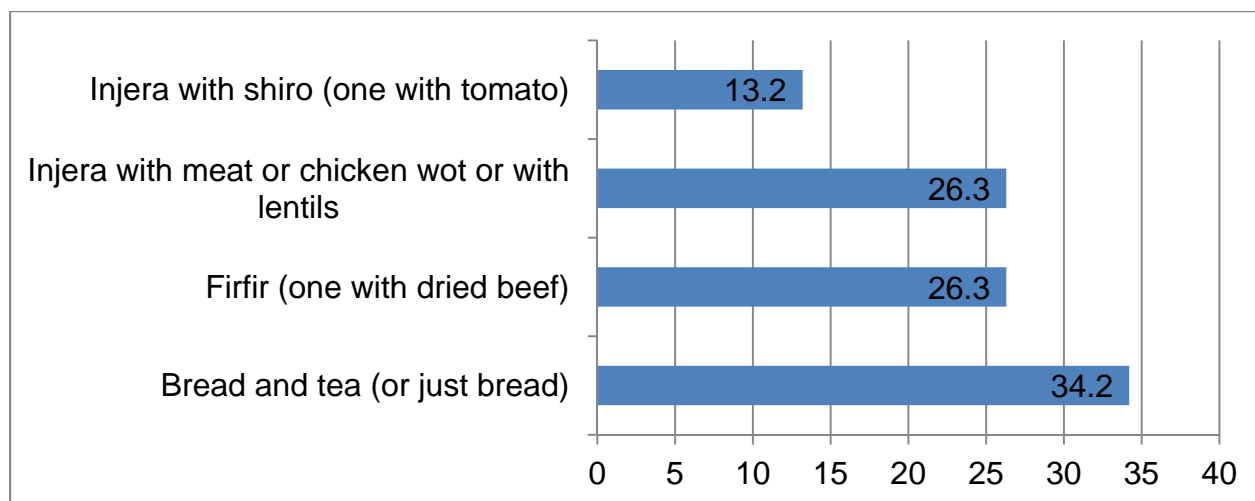


Figure 3: Foods households consume at breakfast (percent households)

Other foods in diet: *Injera* is eaten with a limited variety of other foods, mostly sauces made with *shiro* powder, meat, chicken, and vegetables.

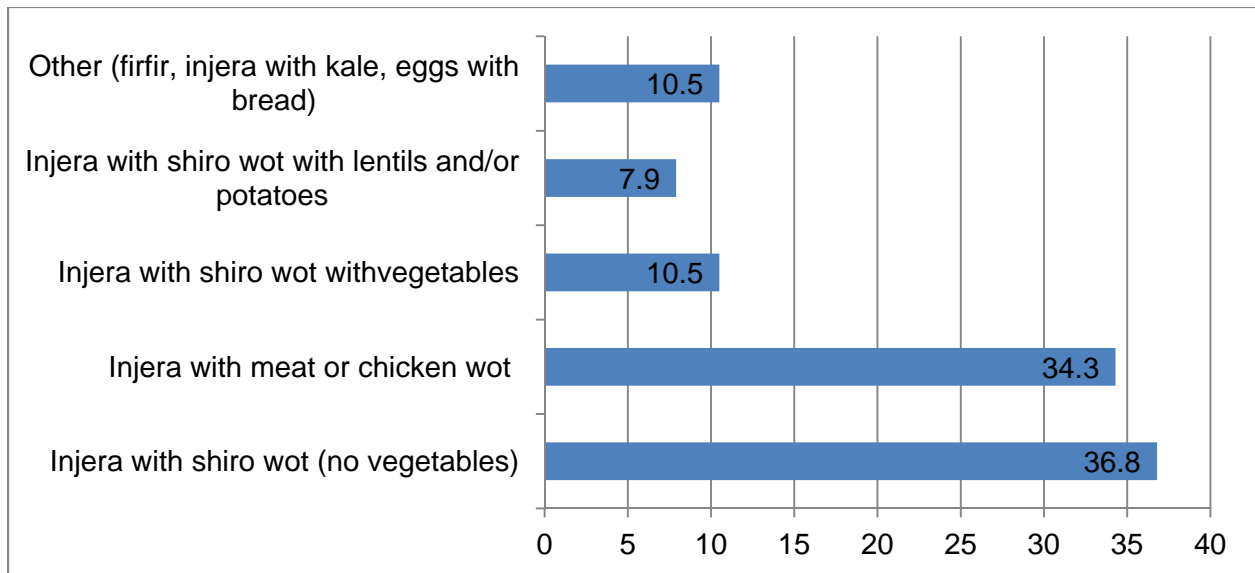


Figure 4: Foods consumed by households at mid-day (percent households)

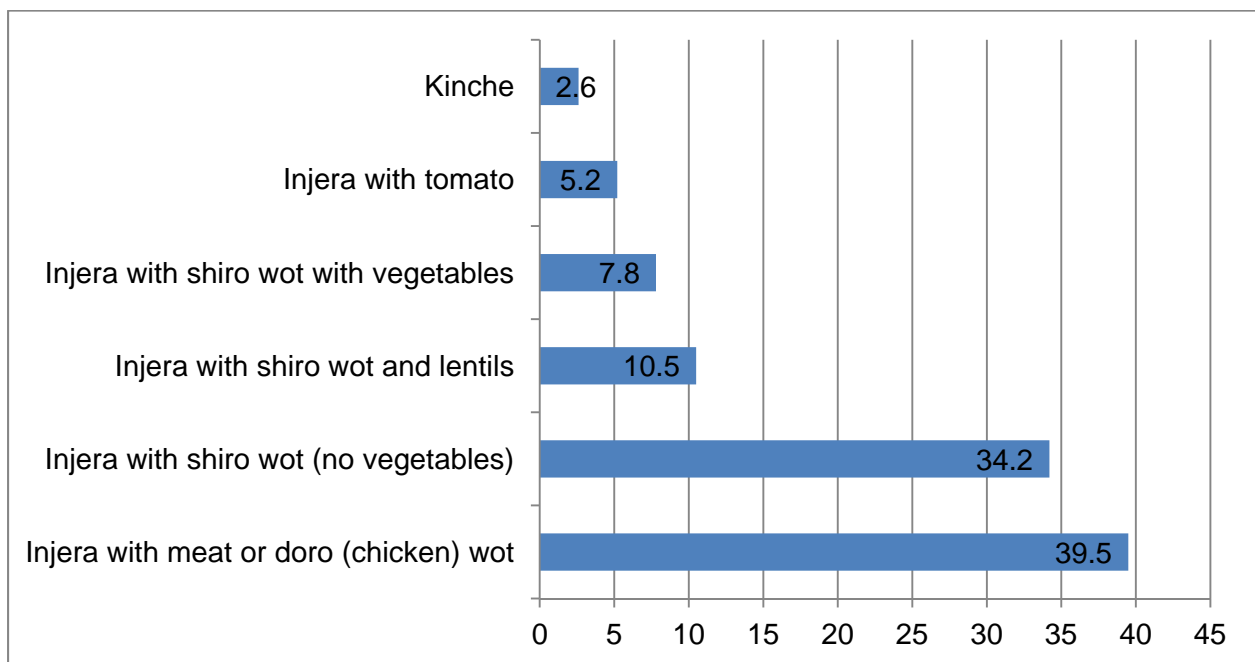


Figure 5: Foods consumed by households for evening meal (percent households)

Based on this information, some preliminary analysis was done on the quality of the household diet in the study sample. This analysis showed that although 45 percent of families were consuming fruits and vegetables (in addition to onion, which every family consumed), only 13.2 percent were consuming vitamin A-rich vegetables.

Increasing consumption of vegetables—adding diversity: The recipe trials and focus group discussions with established gardeners in the UGP found that the majority of the participants in

all groups reported that the primary use of the vegetables in the garden was for home consumption, as well as for sale/income. Only one group of adults reported a preference for selling what they produced, rather than consuming the vegetables. During the recipe trial, in addition to the main dish, the OVC groups prepared one side dish while the adult groups prepared at least two side dishes in addition to the *shiro*. The side dishes included both cooked and raw vegetables (potato, carrot, spinach, kale, cabbage); seven of the groups prepared salads (lettuce, tomato, green pepper).

Groups demonstrated very high capacity in choosing and preparing healthy meal choices when given a variety of vegetables and the typical staple food for this area. Whether these practices are typical when households are purchasing their own foods and/or using foods from their gardens is uncertain. Nevertheless, a lack of knowledge of healthy food combinations and preparation is not a major impediment to improving the household diet.

Nutrition and diet of children under two

Child growth: Children under the age of two (and pregnant and breastfeeding women) are the highest priority groups for nutrition. Preventing malnutrition during this period dramatically improves a child’s chances of surviving and having the opportunity to grow to reach his/her full potential. Nutrition deficits during this period have long-term irrevocable impacts on stature (height) and learning capacity, as well as potential immediate effects on morbidity and mortality. Micronutrients, vitamin A, and iron—both found in certain vegetables—are among the most important for both immediate and long-term health of children under two.

During this period, national nutrition status data show that at birth infants in Ethiopia are at normal nutrition status, but that their growth declines rapidly during the first year of life and stunting (low height-for-age) continues to decline during the second year of life.

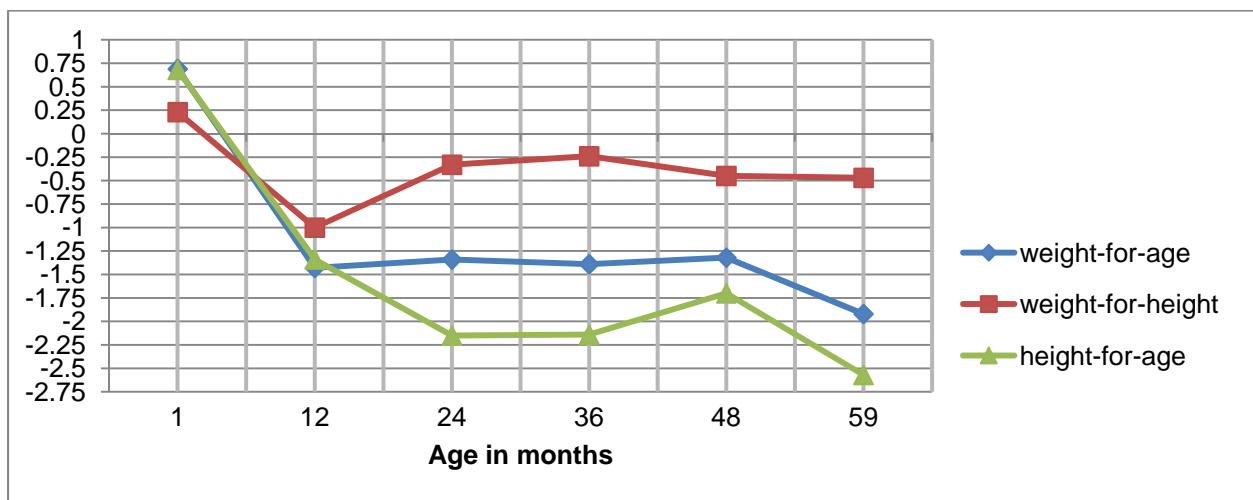


Figure 6: Timing of growth faltering (Source: Data taken from Victora CG, de Onis M, Hallal PC, et al. *Journal of Pediatrics*. 2010;125(3):e473–e480)

Quantitative data also indicate that child nutrition status in Ethiopia is not defined by income quartile. This suggests that economic factors are not the overriding reason for the decline in growth of children under two.

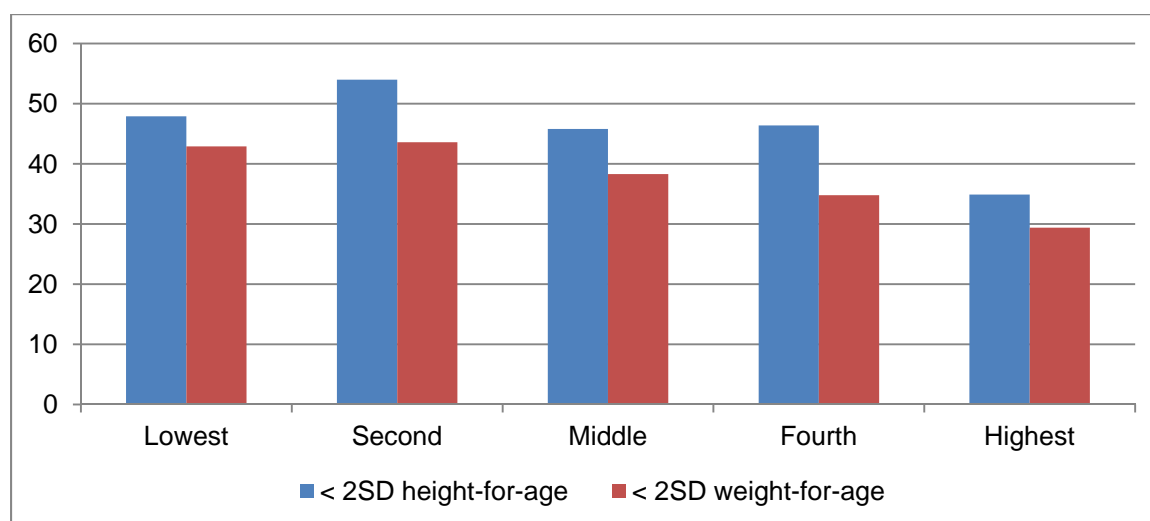


Figure 7: Nutrition status by income quintile (Source: Ethiopia Demographic and Health Survey, 2005)

Beliefs about feeding children under two: The recipe trials and focus group discussion pointed to a number of significant barriers and resistances to providing children under two with a diverse diet including vegetables with critical micronutrients. Among almost all participants, green leafy vegetables (readily available through the gardens) were not deemed appropriate to provide to children under two. Other highly desirable vegetables for children such as carrots were not frequently grown in the gardens and infrequently mentioned in the discussions as an appropriate food for young children. Additionally, while this research did not specifically focus on (or measure) the amount of food provided to children under two, the discussions suggested that beliefs about the quantity of food required for children under two may result in inadequate amounts. Finally, the practice of feeding children by hand which was deemed appropriate by most of the participants has potentially negative implications—both for monitoring the amount of food provided to the child and for hygiene.

Diets of children under two: Information collected through the first round of household visits to learn more about feeding practices of children under age two confirmed the low consumption of fruits and vegetables and other less-than-ideal feeding practices. Households were selected to gather information according to the age of the child from 6 months (the point at which children should be receiving high quality complementary foods) to 24 months. The focus of the household visit was on the introduction of foods in addition to breastmilk—only 8 children of the 38 in the sample were not being breastfed (21 percent), and all but one of those children were in the 18–24 month range, when it is appropriate to wean the child off breastmilk.

Diets of children 6–11 months: All but one child in this age group were breastfeeding, one was using a bottle. One of the children was consuming exclusively liquids with no semi-solid or solid foods in their diet. Almost half of the children were given un-enriched porridge (a food low in

nutrient density), while one-third were consuming fortified cereals or nutrient-dense porridges. One child was given small amounts of the family meal. No vegetables or fruits were given to any of these children.

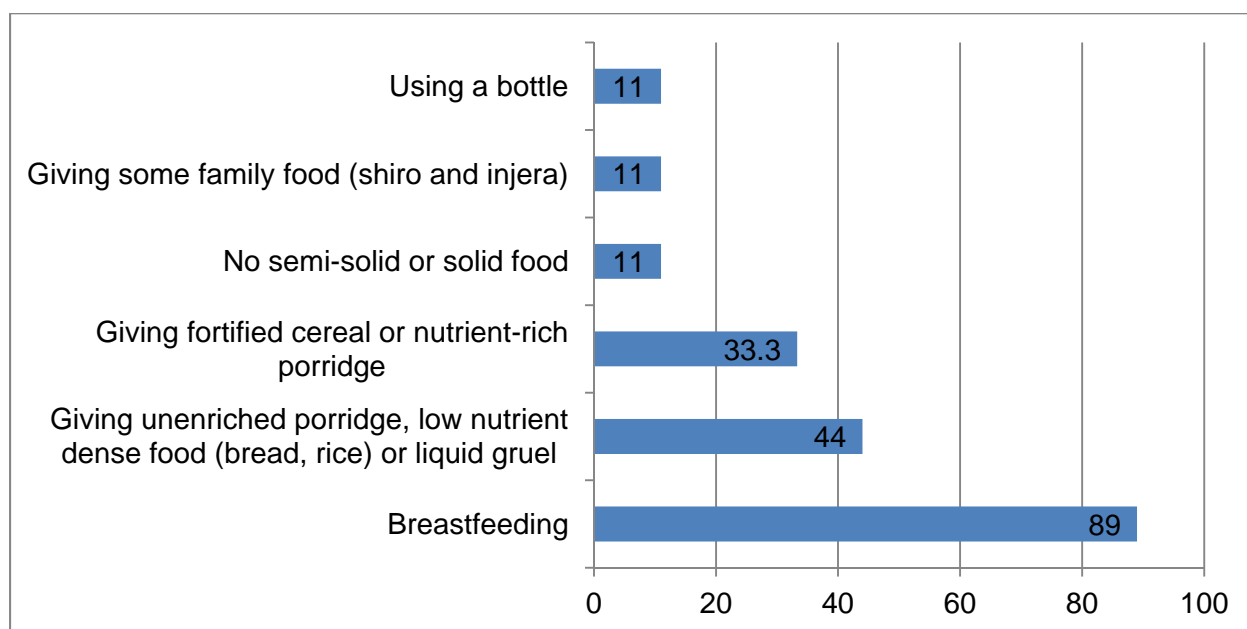


Figure 8: Feeding children 6–11 months (Source: Trials of Improved Practices—first household visit 24-hour recall, April 2011)

Diets of children 12–17 months: Half of the children in this age group were eating the regular family foods; half were also feeding five or more times per day (either food or cow’s milk). Fruit and vegetable consumption was low; about a third were given vegetables mixed in with their meal. Only one in ten children was given fruit or lentils.

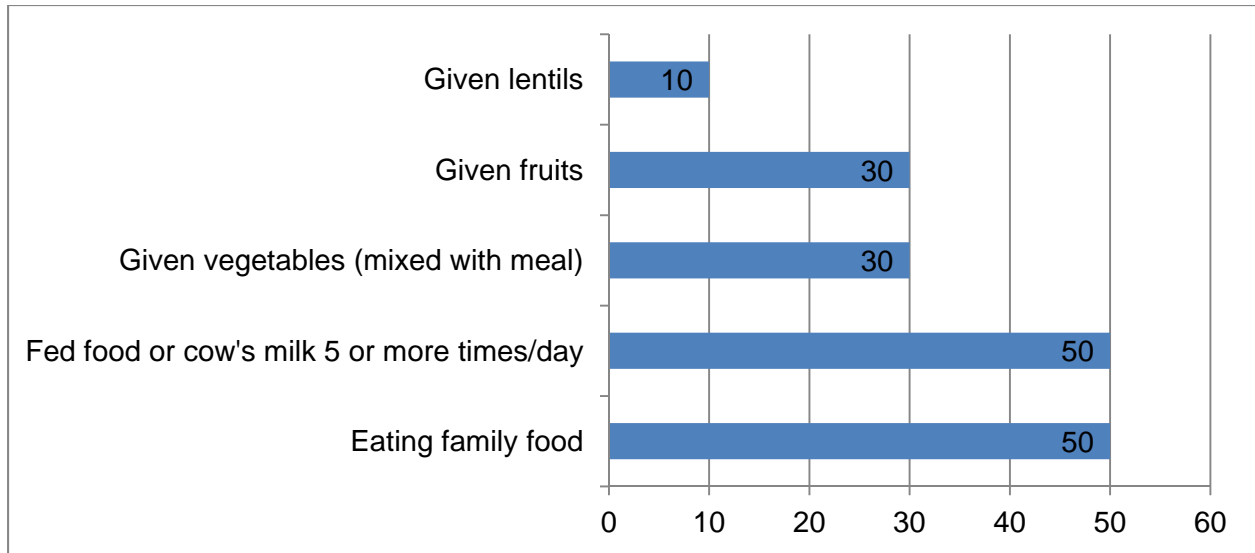


Figure 9: Feeding children 12–17 months (Source: Trials of Improved Practices—first household visit 24-hour recall, April 2011)

Diets of children 18–24 months: In the oldest age category, the majority of children (84.2 percent) were eating family foods, and about half were fed five or more times per day. One quarter of the children were consuming vegetables in the meals they were given, but none of the children were given fruits, while one was still using a bottle.

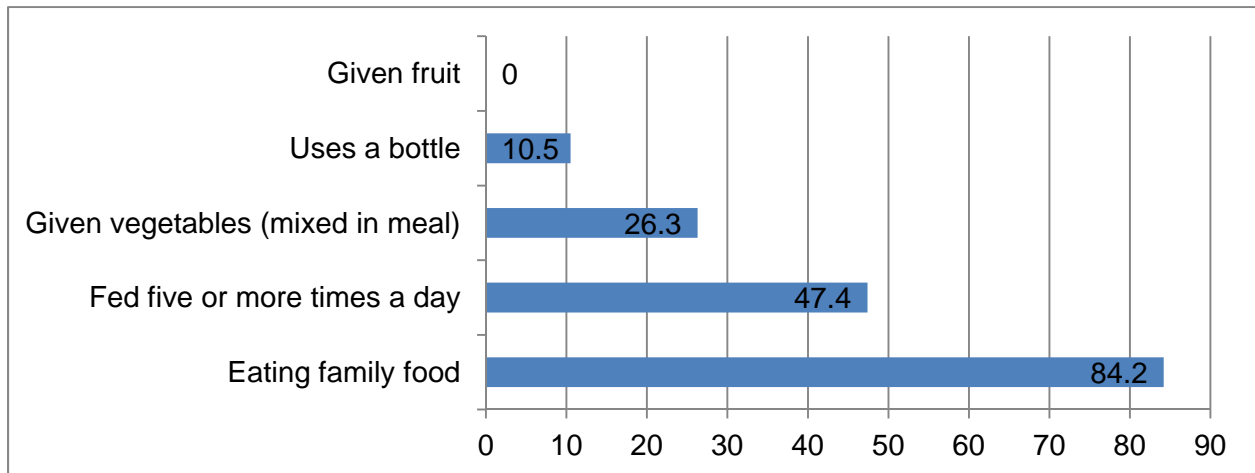


Figure 10: Feeding children 18–24 months (Source: Trials of Improved Practices—first household visit 24-hour recall, April 2011)

Food preparation and hygiene practices

Established gardeners: All groups unanimously demonstrated awareness, understanding, and implementation of excellent personal hygiene and food handling practices during the group recipe trials. It would be useful to know if these practices are constrained in the typical household setting—for instance, is there adequate water and soap?—and, if not, what might be

done to address these constraints. However, lack of knowledge and understanding clearly are not barriers.

New gardeners: Only a little more than half of the households in the survey used soap according to the baseline survey questionnaire results and it was never used for washing vegetables or fruits, or washing hands before preparing food. The primary uses of soap were for washing one's body, washing clothes, and washing after defecating.

Conclusions and Recommendations

UGP participants have improved livelihoods and increased access to quality food via gardening/income generation. Combined with nutrition education, this could lead to better nutrition outcomes. The UGP specifically targets HIV-affected households and a large proportion of beneficiaries are orphans and vulnerable children—many of them adolescents. While nutrition is most important during the first 1,000 days (pregnancy to two years), good nutrition practices (and status) are important throughout the life cycle, especially among adolescent girls and young women prior to pregnancy, and also among people living with HIV/AIDS. **The UGP nutrition education strategies should take into account/stratify these different target groups—household members within the critical window for nutrition, adolescent girls, and others with special nutrition needs—and develop specific nutrition education strategies for each.**

The lack of dietary diversity among the UGP participants and others living in the same areas is a universal issue and one of the primary impediments to improving nutrition. The UGP offers the opportunity to increase diversity in two ways: by encouraging the use of garden produce for home consumption on a daily basis; and by promoting the use of extra income gained through the garden (and other income-generating activities where they are available) on purchasing foods that will add variety to the diet. Adding diversity to family meal patterns will ultimately have a positive effect on all members of the household including young children and other vulnerable groups. **The UGP should promote and encourage the continued use of vegetables on a daily basis in as many family meals as possible, reinforce the consumption of green leafy vegetables, carrots, tomatoes, eggplant, etc., and promote and encourage the purchase of other foods that add diversity—eggs, animal source foods, and fruits.**

Qualitative research results from the UGP areas show significant issues related to feeding practices among children under two years of age. These range from the use of baby bottles to feeding low nutrient dense complementary foods, to late introduction of foods, to very low consumption of vegetables and fruits. Since the UGP does not specifically target caregivers of children under two, opportunities to reach this group should be explored. **When possible, the UGP should develop nutrition education strategies that effectively address the resistances to giving children green leafy vegetables, in particular, as well as other foods that add diversity to the diet of young children.**

The overwhelmingly positive attitude toward the garden activities and the success that participants are having in vegetable production combined with the apparent capacity of participants to prepare healthy meals bodes well for making significant gains in improving household diets. The qualitative research showed good knowledge and skills in quality meal

preparation. Uncertain is the extent to which there is a knowledge-practice gap: participants know what foods are healthy and how to prepare them, but do not do this on a daily basis. **The UGP nutrition education strategy should focus on promoting, supporting, and monitoring specific practices rather than increasing and tracking knowledge to be sure that increased knowledge translates into improved practices.**

Good hygiene practices are also important for maintaining health and nutrition. The results of the baseline show much room for improvement for promoting the improvement of hygiene practices in food preparation and handling, as well as in individual and child care and feeding. On the other hand, the information from the recipe trials with established gardeners suggests that knowledge of proper food handling can be increased. Whether this translates into healthy practices in the home requires further tracking and possibly extra support and promotion. **The UGP should identify and address any barriers to implementing proper food handling and hygiene practices, and again focus on practices rather than knowledge-based education or materials alone.**