



The Effects of SPIR Interventions on Nutrition and Childcare

Evidence from the SPIR midline survey

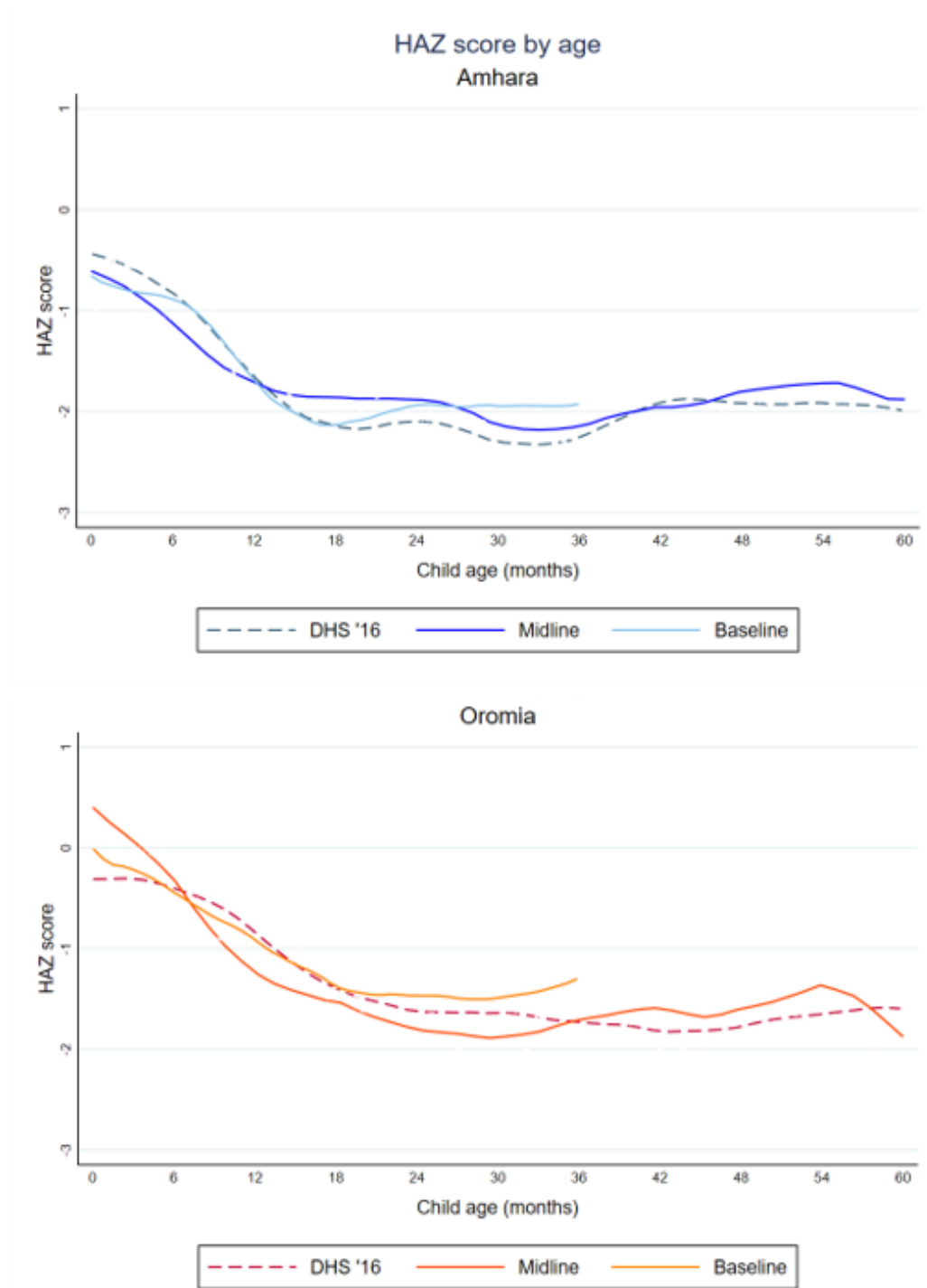
Harold Alderman, Daniel O. Gilligan, Melissa Hidrobo, Jessica Leight, Heleene Tabet

Introduction

Ethiopia has made major strides in improving nutrition in the past two decades; the prevalence of stunting decreased considerably from 58% in 2000 to 38% in 2016 and further to 37% in 2018.¹ While there is no consensus on the underlying causes of this improvement—although substantial increases in income and education surely contributed—there is consensus that more must be done to maintain the momentum. In particular, a number of infant and young child feeding (IYCF) practices can be improved. While breastfeeding initiation is nearly universal, many children are not exclusively breastfed until they are 6 months old, which is the recommended practice. Similarly, few children age 6–23 months meet the minimum acceptable dietary standards. This brief presents evidence on the impact of the SPIR project on key IYCF practices at the time of the midline survey.

Stunting rates in the SPIR project sites in Amhara and Oromia are roughly similar to those observed in those regions in the 2016 DHS survey.² Stunting (recumbent length two standard deviations below norms) is an indicator of chronic undernutrition, which is cumulative; in low-income settings, children often fall behind international growth norms during the first 24 months. This is the case for the samples in both Amhara and Oromia, as indicated in Figure 1. Despite being drawn from a rural PSNP sample, the average height-for-age in the study areas in the baseline sample is fairly close at all ages to the DHS height data in their respective regions. The pattern of decline in nutritional status of children in the first 18 months is also consistent for both regions in the SPIR sample and the DHS.

Figure 1: HAZ against age compared to DHS 2016, by region



Stunting rates for children in the midline were 48.3% for Amhara and 36.2% for Oromia, while DHS results were 46.3% and 36.5%, respectively. The baseline data did not have observations on children older than 36 months; given the age patterns in stature, a direct comparison of the averages in that sample with means from the DHS, which covers children up to 60 months, would be misleading. However, regression analysis indicates that, controlling for age, gender, and parental education, stunting rates in the midline were 4.4 percentage points higher in both regions. This increase is only statistically significant in either

region for children older than 24 months. Indeed, rates of stunting are lower in the midline than the baseline in Oromia. The regression analysis also confirms that—as in most of Africa—boys are significantly more likely to be stunted than girls in both regions.

The SPIR project aims to improve nutrition in young children through programs that affect the three primary determinants of good nutrition: caring practices, food security, and health and sanitation. The remainder of this brief summarizes impacts of the SPIR project at midline on health-seeking behavior and child dietary diversity, inputs that may contribute to impacts on child nutritional status by endline.

Evaluation design and interventions

Evaluation design

The impact evaluation uses a clustered randomized controlled trial (RCT) design to learn the effect of the primary dimensions of SPIR programming, the livelihoods package (L), the nutrition package (N), and enhanced packages L* and N*, respectively. These packages were combined into multisectoral graduation model programs and randomized into four treatment arms: T1: L*+N*, T2: L*+N, T3: L+N*, T4: PSNP only. The L* experimental arms (T1 and T2) also included a sub-randomization in which a one-time poultry package was randomly assigned to poorer households. This brief will discuss the impact of various arms of the SPIR program on caregiving practices. In addition, while the sub-randomized poultry intervention has been investigated as part of livelihood promotion, this brief also reports on its contribution to diet diversity. It is envisioned that changes in childcare and feeding will result in improvement in nutritional status. However, such improvements need to be sustained to lead to measurable improvements in anthropometry. Thus, the impact on stunting will be a key outcome for the endline study rather than the midline survey.

Interventions

The SPIR health and nutrition package includes integrated nutrition behavior change communication (BCC) as well as water, sanitation, and health (WASH) activities. In general, food demonstrations are offered in all SPIR implementation *kebeles*, but the coverage and the frequency differ according to the responsibilities of the different agents. In the N* treatment, BCC activities are organized under an intervention model referred to as Timed and Targeted Counseling (TTC). Under TTC, community Health Extension Workers (HEWs) and Health Development Army (HDAs) provide lessons at health posts at the community level and through household visits on topics including IYCF practices and adolescent and maternal nutrition. Topics include diversifying diets toward nutritious foods (including cooking demonstrations) and promotion of use of health and nutrition services. TTC differs from BCC offered in all communities in that it is conducted at the household level, while in other SPIR *kebeles* BCC is transmitted in group settings such as VESA group, public worksites, and school and religious gatherings. TTC is also designed to encourage men to support their wives in childcare. TTC endeavors to conduct 11 home visits in the first 1000 days, including 3 visits during pregnancy, and to encourage men to support their wives in adopting recommended feeding practices.

The WASH component includes providing support to village-level WASH management activities, limited support to improving sanitation infrastructure (water sources and latrines), and implementation of the Community-led Total Sanitation and Hygiene (CLTSH) approach in which HEWs and HDAs are trained

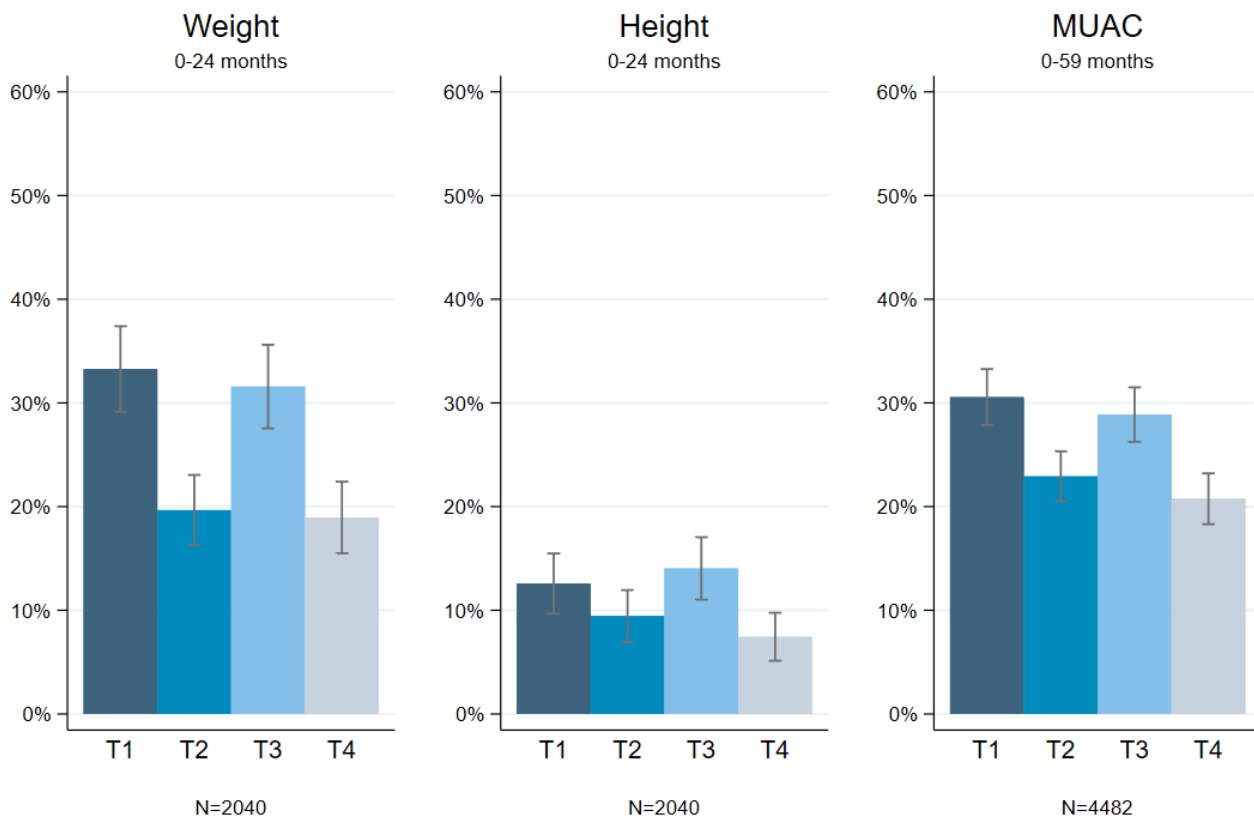
to foster improvements in community sanitation and hygiene and reductions in the practice of open defecation.

Key midline survey results

Child measurements have increased

The recommended schedule for measuring weight-for-age is monthly for children up to 24 months, while mid-upper arm circumference (MUAC) should be measured monthly for children between 6 and 59 months. Height is less commonly measured in Ethiopia. While monthly measurements are not the norm anywhere in the SPIR communities, as indicated in Figure 2, the N* *kebeles* have achieved a significant increase in the frequency of measurement. The probability that a child in the N* communities had their weight measured in the last 3 months is 60–75% higher than in the control sites. The relative increase in the probability of height measurement in N* *kebeles* is similar, but from a smaller base, while the increase in the rate for MUAC measurements was roughly 50% higher for the appropriate age group. There were no observable changes in the frequency of measurement in the N treatment group.

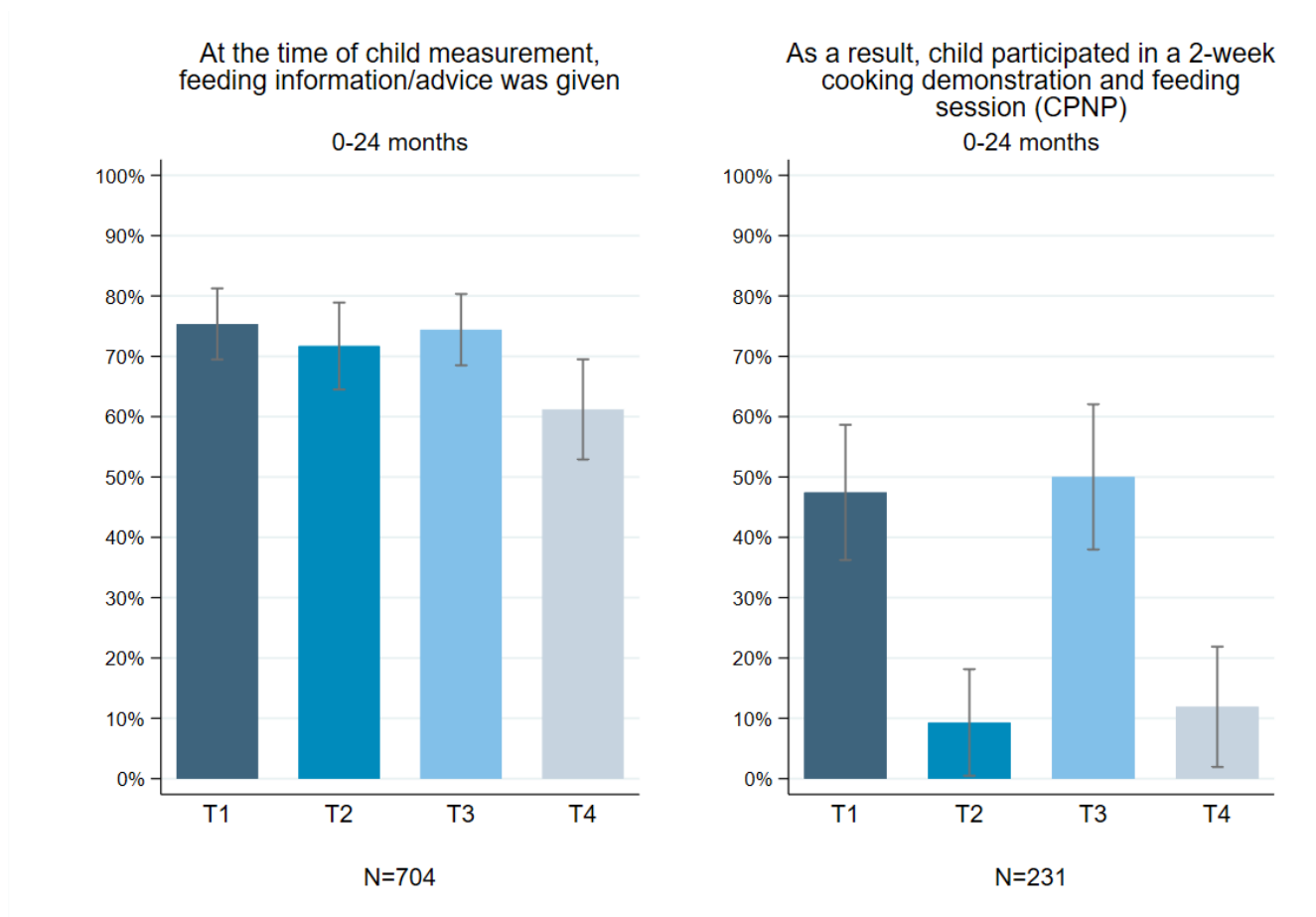
Figure 2: Proportion of index children measured in past 6 months



Growth promotion, not growth monitoring, is the goal in child measurement; the difference is in the feedback loop to the caregiver. Caregivers of those children who were weighed in SPIR do seem to receive advice on feeding (Figure 3). Over 60% of the relatively few children in the control group who were measured were given such information; the shares were 70–75% in the N and N* *kebeles*, differences that are statistically and programmatically significant. Furthermore, conditional on their child being deemed underweight, roughly half of caregivers in N* communities attended two-week cooking demonstration (Community Participatory Nutrition Promotion, or CPNP) sessions. Since these sessions are a new feature of the SPIR program in N* *kebeles*, the fact that a small number of caregivers in the control or T2 reported

participating in such camps appears to be a moderate amount of cross-over. Although the N* guidelines on CPNP targeted children up to 24 months, some additional underweight children 24–36 months also participated in these camps (not illustrated).

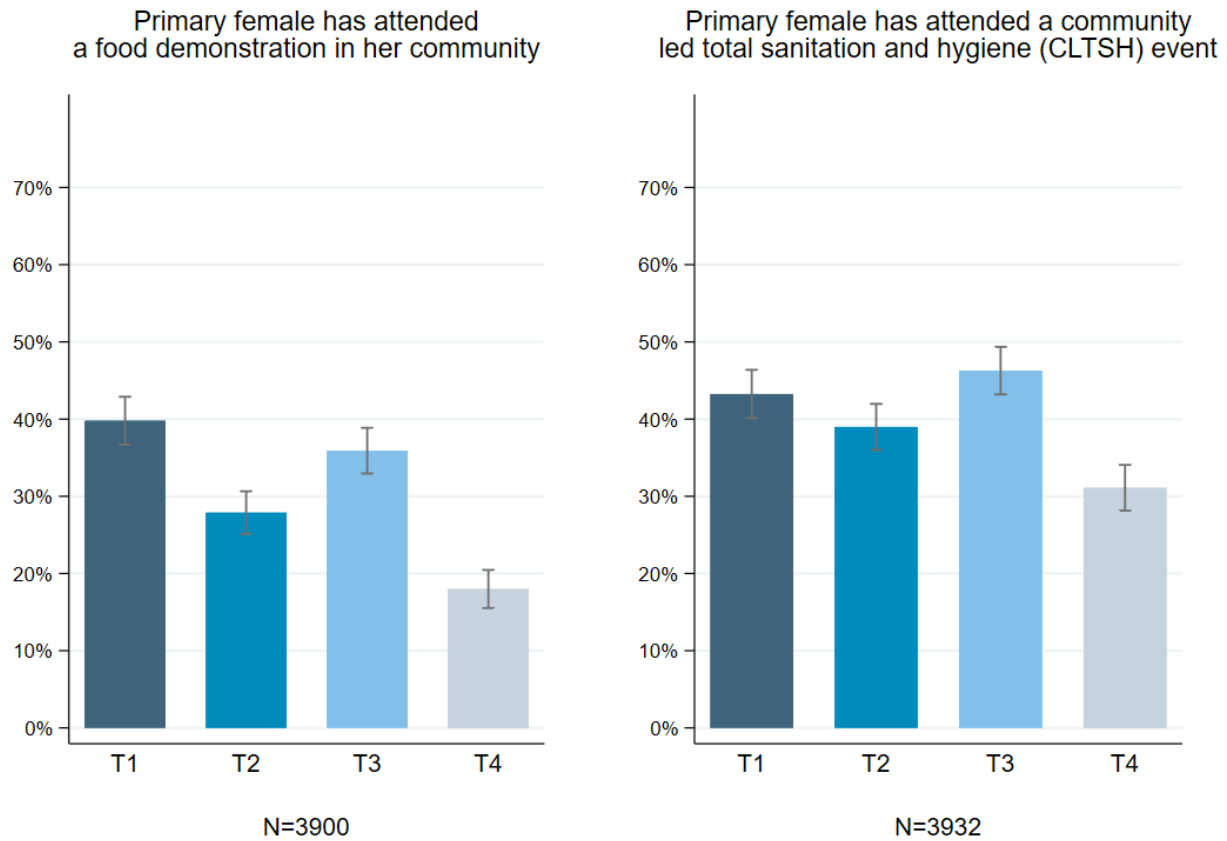
Figure 3: Advice given after measurement and CPNP participation



Participation in community nutrition demonstrations has also increased

In addition to the CPNP feeding camps, which are targeted only to caregivers of acutely malnourished children, SPIR also organizes food demonstrations that are open to all members of the community. As indicated in Figure 4, while nearly a fifth of the control group reported attending such demonstrations, twice as many families in the N* *kebeles* did so. There was also a significant increase in participation in these demonstrations in the N project sites, albeit a smaller increase than that in the N* sites. SPIR also uses public meetings to encourage improved water and sanitation. As also indicated in Figure 4, participation in CLTSH events is comparatively high even in the control communities where 31% of households attended a meeting. N* attendance was nearly 50% and although participation by households in N *kebeles* was somewhat lower, nevertheless, it was 25% higher than in the control; the participation in both N* and N *kebeles* is statistically significantly higher than that in the control.

Figure 4: Females’ participation in food demonstrations and CLTSH events



Families have more contact with Health Extension Workers

Caregivers may have contact with HEWs in the community—for example at public works projects—or in their homes. Sixty-eight percent of the control indicated they had contact with the HEW in the last 6 months, but only 36% had such contact in the last 3 months; the corresponding numbers for N* caregivers were 73% and 43% respectively. However, only one-eighth of the control (12.5%) indicated they met with the HEW at their home in the last 3 months; the N* *kebeles* reported a statistically significant 3.7 percentage point increase over this rate, with the rate of visits in the T2 treatment communities no different statistically from the rate in the control group. One noteworthy aspect is that the information discussed by HEWs differs appreciably by region (Figure 5). For example, both family planning and sanitation were discussed more frequently in Amhara. Conversely, HEWs in Oromia were more likely to mention immunizations or referrals of sick children than were their counterparts in Amhara.

Child diets have become somewhat more diverse

Complementary feeding is among the topics most frequently discussed with HEWs. This discussion aims at closing a serious gap in nutritional practices. The number of food groups consumed by weaning-age children is far below the currently recommended minimum diet diversity of daily consumption of 5 out of 8 groups (including breastmilk): caretakers in the control sites indicated that on average their child consumed foods from 2.6 groups. However, there has been a small significant absolute increase in this measure of dietary diversity in the N* sites, an increase that adds 10% to the amount reported in the control communities. As indicated in Figure 6, there was a significant increase in the probability of consuming legumes and nuts in T1 and T2 communities. Egg consumption also increased on average; the

increase was significantly greater for recipients of the poultry transfer discussed in the livelihoods brief (not illustrated in Figure 6).

Figure 5: Topics discussed with a Health Extension Worker or a Health Development Army member, by region

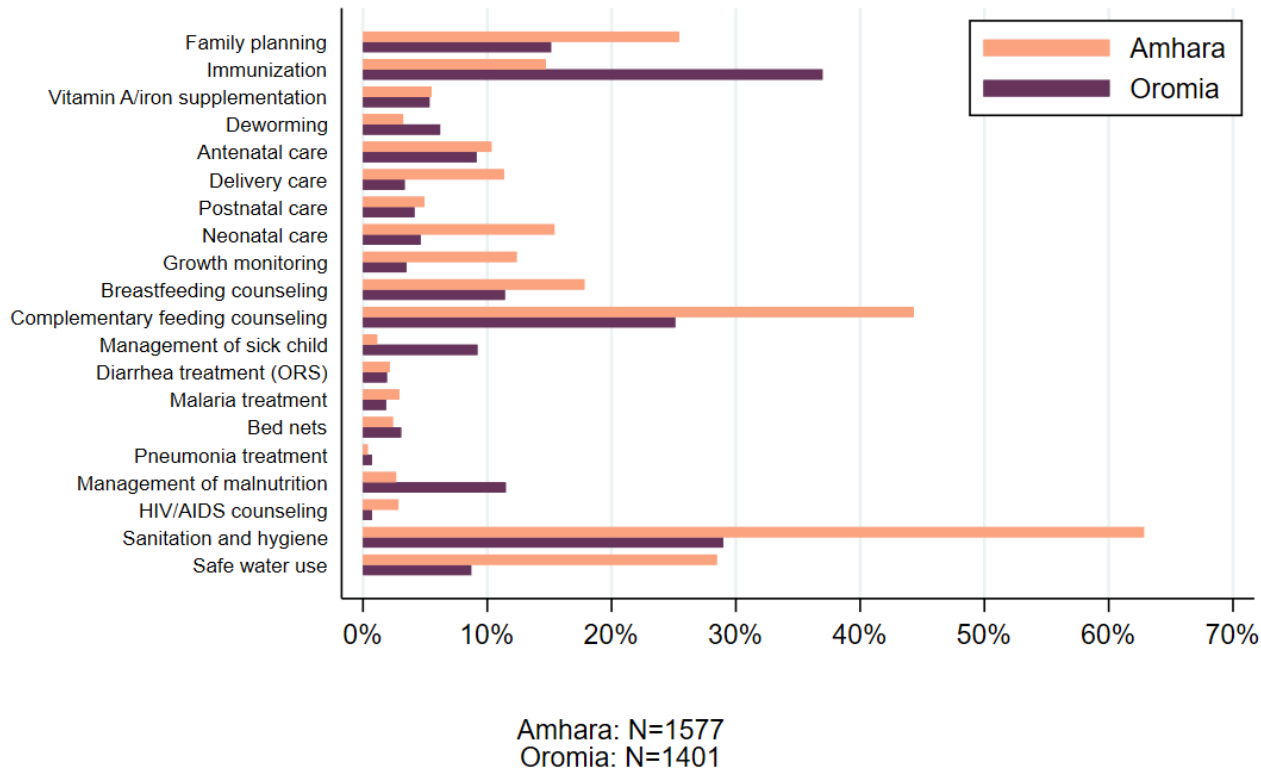
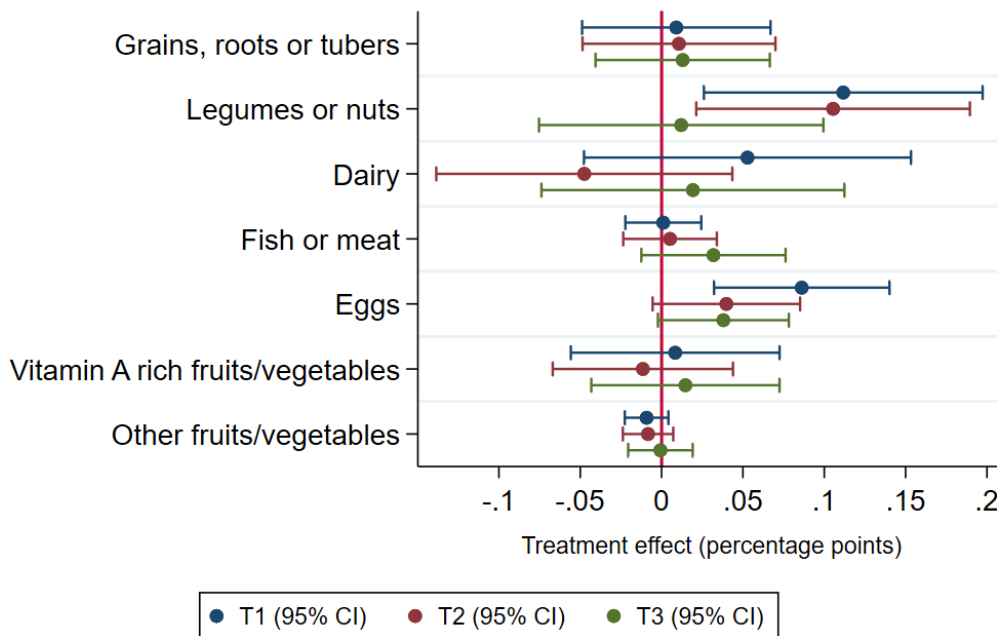


Figure 6: Food groups consumed, children 6–23 months



Conclusions

The N* interventions—and to a lesser degree the N interventions—have shown success in increasing exposure to health services including BCC, food demonstrations, and WASH. In the case of N* programs, these have led to an average increase in the frequency of measurement of 67%. Similarly, communication measures increased significantly, including the provision of feeding advice if a child was weighed (a 25% increase over the mean for the control), and over half of caregivers for the children found to be underweight participated in camps aimed at addressing malnutrition. These increases reflect the goals of the SPIR design. Nevertheless, the frequency of contacts between households and service providers is less than planned and may indicate start-up processes at the time of the midline. This then provides a basis to expect continued improvements over the SPIR program.

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ENDNOTES

¹ EPHI and ICF, *Ethiopia Mini Demographic and Health Survey*, Rockville, Maryland, Ethiopian Public Health Institute, ICF, 2019. <https://dhsprogram.com/pubs/pdf/PR120/PR120.pdf>

² *Ethiopia Demographic and Health Survey 2016*, Addis Ababa, Ethiopia, and Rockville, Maryland, USA, Central Statistics Agency (CSA) and ICF, 2016. <https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf>

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INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
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1201 Eye Street, NW, Washington, DC 20005 USA | T. +1-202-862-5600 | F. +1-202-862-5606 | Email: ifpri@cgiar.org | www.ifpri.org | www.ifpri.info

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