

Responding to Conflict: Does “Cash Plus” Work for Preventing Malnutrition?

New Evidence from an Impact Evaluation of Yemen’s Cash for Nutrition Program

Sikandra Kurdi, Clemens Breisinger, Hosam Ibrahim, Yashodhan Ghorpade, and Afrah Al-Ahmadi

Conflict has become a major driver of humanitarian crises globally. A dramatic increase in both the number of civilians affected by armed conflict and the length of humanitarian responses in recent years reflects the increased frequency and duration of civil wars and the fact that wars are increasingly fought in urban environments.¹ Of the 36 countries with the largest number of people in need of humanitarian assistance in 2016, 21 were countries in conflict—the countries receiving the greatest volume of international humanitarian assistance were Syria, Yemen, and Iraq.² Humanitarian assistance must address both food insecurity and malnutrition for people in conflict situations, but little is known about the best approaches for improving nutrition outcomes during crises. Our recent impact evaluation of Yemen’s Cash for Nutrition program provides new evidence on the potential for “cash plus” programs to prevent malnutrition in conflict-affected communities.

Humanitarian aid has traditionally focused on in-kind assistance, particularly food distribution, but cash transfers are now a popular alternative model for aid delivery in contexts where markets for basic goods are functional. Over the past 10 years, major NGOs and donor agencies have shifted toward the use of cash where possible because cash transfers are generally preferred by beneficiaries and allow for significant cost savings compared with in-kind assistance for large-scale programs.³

Cash transfers have also been promoted as a way to address nutrition needs in humanitarian crises.⁴ In the increasingly common case of protracted food emergencies associated with conflict, it is not enough to address the immediate need for calories at the household level: the humanitarian response must ensure that aid recipients, especially children and pregnant women, receive an adequate diet to avoid long-term consequences of malnutrition. Children who receive insufficient micronutrients during the first 1,000 days of life are

KEY POLICY LESSONS

- Cash transfers combined with nutritional education in a conflict setting can have significant positive impacts on maternal and child dietary diversity, child weight-for-height, and child height-for-age, and may significantly decrease the probability of children being diagnosed with moderate or severe acute malnutrition.
- Targeting plays an important role in the efficiency of cash transfers for reducing malnutrition—the greatest impacts tend to be among the poorest tercile of households included in the program.
- Soft conditionality is an effective alternative to unconditional or strictly conditional cash transfer programs in conflict settings—this approach can encourage high attendance at required nutritional education sessions without risk of negative consequences for non-attendees.

at risk of stunting and long-term lowered human capital.⁵ Cash transfer programs are promising in this regard—observational studies suggest that cash transfers are associated with greater dietary diversity than direct food distribution is.⁶

GAPS IN THE EVIDENCE

Given the challenges and ethical concerns of conducting randomized studies in crisis contexts, there is little rigorous evidence about how well cash transfers work in conflict areas. A recent comprehensive literature review identified only four empirically rigorous studies measuring impacts of cash-based approaches on nutritional outcomes during humanitarian emergencies, primarily focusing on methodologies for providing aid to internally displaced persons (IDPs) and refugees.⁷ Notably, only one of these studies, focused on a refugee population, was able to randomize a cash intervention compared to a pure control group.⁸ The other three studies randomized

food transfers or vouchers compared to cash transfers and showed that relative to food, cash transfers were more effective in increasing household-level dietary diversity, while less effective at increasing food security and total calorie consumption.⁹ None of these studies, however, reported on individual dietary diversity or nutritional outcomes for children, and none measured the impact of cash transfers on households in conflict zones.

The evidence from cash transfer programs outside of emergency contexts is mixed. Most evaluations of cash transfer programs find no impacts on child anthropometrics or micronutrient status.¹⁰ However, a few studies of non-emergency cash transfer programs have found positive impacts on nutritional outcomes. Notably, the studies showing significant impacts are all of nutrition-sensitive “cash plus” programs, which combine cash transfers with additional components such as social marketing, behavior change communication, or nutritional supplements.¹¹

CONTEXT OF THE YEMEN CONFLICT

The civil conflict in Yemen is entering its fifth year, and the economic impacts have been catastrophic for Yemeni households. The economy has contracted by about 50 percent since March 2015; around 75 percent of the population is in need of humanitarian assistance; and the situation is currently considered the worst humanitarian crisis in the world.¹² Even before the current civil conflict, child malnutrition was widespread in Yemen: in 2013, 46.5 percent of children under 5 in Yemen were stunted, and 16.3 percent suffered from acute malnutrition.¹³ As of February 2019, an estimated 2 million children, or approximately 50 percent of children under 5, were suffering from acute malnutrition, and more than 350,000 were severely malnourished.¹⁴

YEMEN'S CASH FOR NUTRITION INTERVENTION

Yemen's Cash for Nutrition program is a conditional cash transfer program implemented by the Yemen Social Fund for Development (SFD). The program today is a resumption and expansion of a pilot program that started in January 2015 and targeted households of Social Welfare Fund (SWF) beneficiaries with children under 2 years or pregnant mothers in three districts of Al Hodeidah Governorate. Local women with at least a high-school education are employed by the program as community health educators. The educators receive basic training to provide monthly nutrition education sessions and malnutrition screening. Program recipients are required to attend these sessions, but the program takes a soft approach to conditionality with emphasis on “case management,” meaning that community health educators reach out to non-attendees.

After a nine-month suspension from January to September 2016, the pilot program was incorporated into the World Bank-funded Yemen Emergency Crisis Response Project (YECRP). YECRP uses existing development institutions such as the Social Fund for Development to deliver crisis response interventions with both short- and long-term goals.¹⁵ Under this framework, the Cash for Nutrition program was expanded to additional governorates, and the size of the cash transfers was increased to compensate for the erosion of the purchasing power of the Yemeni riyal as a result of high inflation.

METHODOLOGY AND DATA

The SFD designed an impact evaluation of the pilot program as a randomized control trial before the start of the conflict. Potential beneficiaries were divided into direct relatives of SWF beneficiaries and indirect relatives of SWF beneficiaries. Because not all the indirect relatives in the target districts could be included in the pilot project due to the limited scale, random assignment was used to choose some communities in which both direct and indirect relatives were included; direct relatives were included in all communities.

When the program was resumed and expanded in 2016 in response to the humanitarian crisis, all relatives of SWF beneficiaries became eligible to participate. However, due to delays in the registration process, the initial randomization from the pilot project was maintained in the first three districts through the first year of the program's resumption. These circumstances created a rare situation that allowed for rigorous measurement of the impacts of cash transfers in a crisis context.

Data for the evaluation come from a household survey of 2,000 households with indirect relatives of SWF beneficiaries in the three targeted districts in Al Hodeidah, half of which were in communities where indirect relatives were included in the program (treated) and half of which were in communities where they were not included (control). Households were surveyed prior to receiving any transfers in December 2014–January 2015 and again in July–August 2017, after participating in the initial program for one year and the resumed program for one year. Our analysis compares outcomes at follow-up for households in treated communities to households in control communities, while controlling for differences in household characteristics and the presence of food distribution programs in communities and adjusting for the fact that some households assigned to the control group were nevertheless included in the program. (Estimates of program impact are based on differences-in-differences regression with household-level fixed effects where program participation status at follow-up is instrumented by community-level assignment.)

IMPACTS OF THE CASH FOR NUTRITION PROGRAM

Consumption Patterns and Child and Maternal Dietary Diversity

Rather than increasing consumption of staples, households primarily used the cash transfers to buy fruits, vegetables, and animal products, resulting in significant positive impacts on indicators of individual dietary diversity for both women and children in the context of severe declines in dietary diversity in all households due to the conflict. Households participating in the Cash for Nutrition program were receiving 10,000 riyals per month at the time of follow-up data collection in 2017, equivalent to about 25 percent of their average monthly spending on food. The evaluation shows that the transfers increased household food purchases by an amount equal to 63 percent of the value of the transfers and in particular increased spending on nonstaple food items included in the survey by an amount equal to 48 percent of the total value of the transfer.

The positive impacts on consumption of nonstaples are largest among the poorest tercile of households. In those poorest households, the evaluation found statistically significant increases in spending on milk and a variety of fruits and vegetables as well as a marginally significant increase in spending on eggs.

The impact of increased access to nonstaple foods combined with nutritional education that emphasized the importance of complementary feeding is evident in the large and statistically significant impacts on the child dietary diversity scores (CDDS) of children aged 6–23 months (Figure 1). This index measures on a scale of 0–7 the number of different food groups consumed in the past 24 hours and provides a good indicator of sufficiency of nutritional intake.¹⁶ The program increased the CDDS of participating households by 0.8 food groups, partially making up for the

decline of 1.3 food groups between baseline and follow-up seen in nonparticipating households without access to food distribution programs. The evaluation also found significant but smaller positive impacts on dietary diversity for women.

Using a community-level survey, the evaluation also showed that there were no measurable impacts of the cash transfers on prices or food availability at local markets, at least during the relatively calm period when ex post survey data were collected.

Sanitation and Breastfeeding Practices

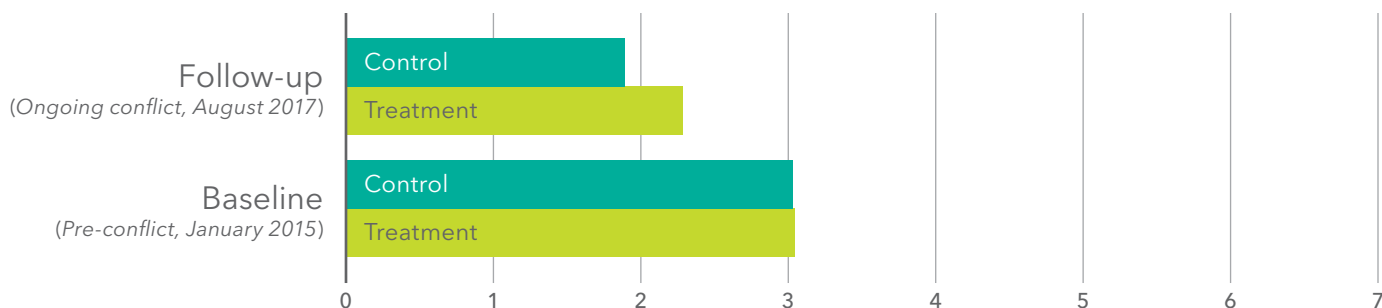
The nutritional education was effective in improving key practices related to child nutrition outcomes. The program increased the probability of early initiation of breastfeeding (in the first hour after birth) by 15 percentage points, compared with the average rate of 74 percent in control communities at follow-up. The program also increased the probability of exclusive breastfeeding by 15 percentage points compared with the average rate of only 14 percent in control communities at follow-up. Finally, the program increased the probability of treating drinking water—either by boiling or filtering—for water consumed by adults by 17 percentage points and for water consumed by children under 2 by 10 percentage points.

Child Nutrition Outcomes

In terms of long-term nutrition outcomes, the program had a significant impact on the share of children reported to have been diagnosed with moderate acute malnutrition in the past two years. The program *decreased* this rate by 10 percentage points for participating households relative to others, in the context of an overall background *increase* of 13 percentage points. The program also decreased the share of children who were diagnosed with severe acute malnutrition after evaluation at the health center by 9 percentage points.

FIGURE 1 Child dietary diversity scores

Food groups (out of 7) consumed in past 24 hours for children aged 6–23 months



Note: Figure shows mean values in the treatment and control groups. Impact results summarized in this brief additionally control for household characteristics, presence of food distribution programs, and actual participation status of households.

Among the poorest third of households, the evaluation also found substantial and statistically significant program impacts on height-for-age z-scores (0.35) and on weight-for-height scores (0.43) for children who were measured at both baseline and follow-up. These are children who were between 7 and 30 months of age at the time of the baseline survey. The treated children spent most of their lives in the program and most of them were at the age of complementary feeding during the first period of nutritional training, so they benefited from the strong impacts of the program on increasing both dietary diversity for young children and the level of consumption of nonstaples at the household level.

Other Coping Strategies

In addition to supporting dietary diversity, another benefit of cash transfers in emergency situations is that transfers allow households to make nonfood purchases without drawing down their assets.¹⁷ While the bulk of the transfers were used for food purchases, 48 percent of households in the study reported using some of the cash transfers to repay debts to shopkeepers and 30 percent reported spending on health-care. The evaluation shows that the program's cash transfers helped to significantly decrease the share of households that reported selling gold, a traditional form of savings (among the least-poor tercile of households), or borrowing from friends and neighbors (among the poorest tercile of households).

Full references are available at <https://doi.org/10.2499/9780896293601>.

Acknowledgments

The impact evaluation underlying this research was managed by the World Bank and funded by the Nordic Trust Fund. Data collection was funded under the Yemen Emergency Crisis Response Project, funded by the International Development Association (IDA) of the World Bank Group and implemented by the United Nations Development Programme and its implementing partner the Yemen Social Fund for Development (SFD). We gratefully acknowledge that this impact evaluation would not have been possible without the support of the SFD. Lamis Al-Iryani, head of monitoring and evaluation, supported the management and design of the evaluation. Mohamad Al-Maweri and Tareq Yeslam managed the data collection and were actively involved in the development of the survey instrument. We are further grateful to the Cash for Nutrition program staff, including Jalila Shugaladeen, head of the education, health, and social protection unit, and all of the enumerators who participated in the household survey for their support of this project. IFPRI intern Omar Al-Eryani provided excellent research assistance at the data cleaning and preparation stage. This work was undertaken as part of the

EFFECTIVENESS OF SOFT CONDITIONALITY

Even without the use of hard conditionality, attendance at the nutritional education sessions was high. Of surveyed households in treatment communities, 96 percent reported attending at least one nutritional education session, and the average number of sessions attended by participants during the final year of the program was 8.2 out of a maximum of 9. This points to the effectiveness of having community health educators follow up with non-attendees, rather than withdrawing the cash transfer as punishment for non-attendance.

In addition, the evidence suggests that the benefits of the training sessions also reached nonparticipating households. Among control households (who were not receiving cash transfers through the program), 13 percent reported having attended at least one of the nutritional training sessions held in their communities, and 26 percent reported having learned something new from the community health educator assigned to their community. Indirect evidence of this positive spillover includes significant increases between baseline and follow-up even among nonparticipants in proper water treatment; knowledge about health center location; knowledge about iron-rich foods for preventing anemia; and knowledge about exclusive breastfeeding.

CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI).

This brief is based on S. Kurdi, Y. Ghorpade, and H. Ibrahim, "The Cash for Nutrition Intervention in Yemen: Impact Evaluation Study," *MENA Working Paper 19*, International Food Policy Research Institute, Cairo, April 2019.

This publication has been peer reviewed. Any opinions stated in this brief are those of the author(s) and are not necessarily representative of or endorsed by IFPRI, the Social Fund for Development, PIM, or the World Bank.

Sikandra Kurdi is an associate research fellow, **Clemens Breisinger** is the country program leader and a senior research fellow, and **Hosam Ibrahim** is a senior research assistant in the Development Strategy and Governance Division, International Food Policy Research Institute, Cairo, Egypt. **Yashodhan Ghorpade** is an economist and **Afrah Al-Ahmadi** is a senior social protection specialist at the World Bank, Washington, DC.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

A world free of hunger and malnutrition

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

© 2019 International Food Policy Research Institute (IFPRI). This publication is licensed for use under a Creative Commons Attribution 4.0 International License (CC BY 4.0), <https://creativecommons.org/licenses/by/4.0/>.

DOI: <https://doi.org/10.2499/9780896293601>

Endnotes

- ¹ M. Kirolos et al., *The War on Children: Time to End Grave Violations against Children in Conflict* (London: Save the Children International, 2018); D. Gaidner, F. Mandelik, and L. Moberg, *We Accept Cash: Mapping Study on the Use of Cash Transfers in Humanitarian, Recovery and Transitional Response* (Oslo: Norwegian Agency for Development Cooperation, 2011).
- ² Development Initiatives, *Global Humanitarian Assistance Report 2018* (Bristol, UK: 2018).
- ³ J. Hoddinott et al., [Enhancing WFP's Capacity and Experience to Design, Implement, Monitor, and Evaluate Vouchers and Cash Transfer Programmes: Study Summary](#) (Washington, DC: IFPRI, 2013); U. Gentilini, *Our Daily Bread: What Is the Evidence on Comparing Cash versus Food Transfers?*, Social Protection & Labor Discussion Paper 1420, World Bank, Washington, DC, 2014; Gaidner, Mandelik, and Moberg, *We Accept Cash*; World Bank, *Cash Transfers in Humanitarian Contexts*, Strategic Note (Washington, DC, 2016).
- ⁴ S. Bailey and K. Hedlund, *The Impact of Cash Transfers on Nutrition in Emergency and Transitional Contexts: A Review of Evidence* (London: Overseas Development Institute, Humanitarian Policy Group, 2012).
- ⁵ S. Grantham-McGregor, L. Fernald, and K. Sethuraman, "The Effects of Health and Nutrition on Cognitive and Behavioral Development in Children in the First Three Years of Life," *Food Nutrition Bulletin* 20, no. 1 (1999): 53-75; M. Arimond and M. T. Ruel, "Dietary Diversity Is Associated with Child Nutritional Status: Evidence from 11 Demographic and Health Surveys," *Journal of Nutrition* 134, no. 10 (2004): 2579-2585; R. E. Black et al., "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries," *Lancet* 382, no. 9890 (2013): 427-451.
- ⁶ Bailey and Hedlund, *Impact of Cash Transfers on Nutrition in Emergency and Transitional Contexts*.
- ⁷ S. Doocy and H. Tappis, "The Effectiveness and Efficiency of Cash-Based Approaches in Protracted and Sudden Onset Emergencies: A Systematic Review," Campbell Collaboration, accessed March 6, 2019, <https://doi.org/10.4073/csr.2017.17>.
- ⁸ M. Hidrobo et al., "Cash, Food, or Vouchers? Evidence from a Randomized Experiment in Northern Ecuador," *Journal of Development Economics* 107 (2014): 144-156.
- ⁹ Doocy and Tappis, "Cash-Based Approaches in Humanitarian Emergencies."
- ¹⁰ M.T. Ruel and H. Alderman, "Nutrition-Sensitive Interventions and Programmes: How Can They Help to Accelerate Progress in Improving Maternal and Child Nutrition?," *Lancet* 382, no. 9891 (2013): 536-551; J. Manley, S. Gitter, and V. Slavchevska, *How Effective Are Cash Transfer Programmes at Improving Nutritional Status? A Rapid Evidence Assessment of Programmes' Effects on Anthropometric Outcomes* (London: University of London, 2012); J.L. Leroy, M.T. Ruel, and E. Verhofstadt, "The Impact of Conditional Cash Transfer Programmes on Child Nutrition: A Review of Evidence Using a Programme Theory Framework," *Journal of Development Effectiveness* 1, no. 2 (2009): 103-129.
- ¹¹ K. Macours, N. Schady, and R. Vakis, "Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment," *American Economic Journal: Applied Economics* 4, no. 2 (2012): 247-273; J.R. Behrman and J. Hoddinott, "Programme Evaluation with Unobserved Heterogeneity and Selective Implementation: The Mexican PROGRESA Impact on Child Nutrition," *Oxford Bulletin of Economics and Statistics* 67, no. 4 (2005): 547-569; O. Attanasio et al., *How Effective Are Conditional Cash Transfers? Evidence from Colombia*, Briefing Note 54 (London: Institute for Fiscal Studies, 2005); L.C. Fernald, P.J. Gertler, and L.M. Neufeld, "Role of Cash in Conditional Cash Transfer Programmes for Child Health, Growth, and Development: An Analysis of Mexico's Oportunidades," *Lancet* 371, no. 9615 (2008): 828-837; A.U. Ahmed et al., *Which Kinds of Social Safety Net Transfers Work Best for the Ultra Poor in Bangladesh? Operation and Impacts of the Transfer Modality Research Initiative* (Dhaka: IFPRI; World Food Programme, Bangladesh, 2016).
- ¹² UNOCHA (United Nations Office for the Coordination of Humanitarian Affairs), "Yemen Humanitarian Response Plan, January-December 2018," accessed March 6, 2019; A.A. Al-Ahmadi and S. De Silva, "Delivering Social Protection in the Midst of Conflict and Crisis: The Case of Yemen," Social Protection & Jobs Discussion Paper 1801, World Bank, Washington, DC, 2018.
- ¹³ Yemen Demographic and Health Survey, 2015.
- ¹⁴ UNOCHA, "Yemen Humanitarian Response Plan."
- ¹⁵ Al-Ahmadi and De Silva, *Delivering Social Protection in the Midst of Conflict and Crisis*.
- ¹⁶ M.M. Moursi et al., "Dietary Diversity Is a Good Predictor of the Micronutrient Density of the Diet of 6- to 23-Month-Old Children in Madagascar," *Journal of Nutrition* 138, no. 12 (2008): 2448-2453.
- ¹⁷ B. Schwab, *Comparing the Productive Effects of Cash and Food Transfers in a Crisis Setting: Evidence from a Randomized Experiment in Yemen*, Innocenti Working Paper 2018-09, UNICEF Office of Research, Florence, Italy, 2018.