Did prior receipt of nutrition-sensitive social protection build resilience to COVID-19 in rural Bangladesh?

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Summary

- The Transfer Modality Research Initiative (TMRI) was a pilot transfer program implemented in rural Bangladesh from 2012-2014, following a randomized controlled trial (RCT) design. TMRI provided either cash transfers or food transfers, with or without nutrition behavior change communication (BCC), to ultra-poor women and their family members in two regions of rural Bangladesh.
- The nutrition BCC entailed intensive weekly group-based nutrition training, home visits, and community meetings focused on infant and young child feeding and encouraged home production of nutritious foods.
- We conducted a phone survey in November 2021 to re-interview a subset of the households that participated in TMRI from 2012-2014. We aimed to assess any differences in how they were faring shortly after the devastating third wave of the COVID-19 pandemic in Bangladesh.
- We find that attrition in our phone survey is low relative to the intended sample, and not correlated with treatment. This allows us to assume that differences across the treatment and control arms in November 2021 are causal differences – that is, persistent effects of the different treatment arms implemented seven years earlier.
- Overall, we find that households that received a combination of cash transfers and intensive nutrition BCC from 2012-2014 fare significantly better in November 2021 than those in the control group or the other arms, although they nonetheless struggle in many dimensions.
- In November 2021, compared with the control group, former Cash+BCC households report experiencing significantly lower prevalence of moderate or severe food insecurity, report a more diverse diet (being significantly more likely to consume eggs, dairy, and fruit in the previous seven days), report a slightly smaller share of main earners being unemployed, and report experiencing significantly less stress.
- Our findings suggest that providing poor rural households in Bangladesh with sizable cash transfers of long duration alongside intensive complementary programming, such as nutrition BCC, may help them cope with future shocks. Thus, such programming may be a cost-effective strategy to reduce households' immediate and future food and nutrition insecurity.

Background

Social protection programs – including direct cash and food transfers to poor households – have been shown to be very effective in reducing short-term poverty and food insecurity in low- and middle-income countries (Hidrobo et al. 2018; Bastagli et al. 2019). Social protection is also a common emergency policy response to shocks. For example, use of social protection programs has rapidly expanded around the world during the COVID-19 pandemic to address households' immediate needs (Gentilini et al. 2020). However, little is

known about the extent to which receiving social protection can help households build resilience against *future* shocks – that is, whether being a prior recipient of social protection programs can help a household protect its well-being in the face of a new shock. We explore this issue in the context of a pilot transfer program called the Transfer Modality Research Initiative (TMRI), which was designed and evaluated by the International Food Policy Research Institute (IFPRI) and was implemented by the UN World Food Programme (WFP) from 2012-2014 in northern and southern regions of rural Bangladesh. We aim to assess whether receipt of the program led to sustained impacts on how rural households coped with the COVID-19 pandemic as of November 2021. In particular, our analysis addresses the following question: did receiving TMRI help households during the COVID-19 pandemic seven years later?

TMRI provided either cash transfers (1,500 taka per month) or food transfers (rice, lentils, and oil equivalent to 1,500 taka per month), with or without nutrition behavior change communication (BCC), to women in ultra-poor rural households in the two regions from 2012-2014. The nutrition BCC entailed intensive weekly group-based nutrition training, home visits, and community meetings focused on infant and young child feeding and encouraged home production of nutritious foods. Prior research on TMRI showed sustained poverty reduction impacts as of 2018 particularly from the combination of the cash transfers linked to nutrition BCC in the Northern region (Ahmed et al. 2020). These impacts appeared to be driven in part by greater investments in livestock- and poultry-rearing and homestead gardening, owing to the cash providing resources and BCC improving knowledge and psychological well-being. For policy purposes, it is important to understand whether such an intervention could persist in protecting households during a major shock like the COVID-19 pandemic and associated lockdowns, occurring seven years after the end of intervention. To explore this issue, we re-interviewed the TMRI households in the Northern region in November 2021, following the ravaging third wave of COVID-19 in Bangladesh.

Methods

In November 2021, we conducted a phone survey of households that had previously participated in TMRI. Our sample draws on 2,000 households that were part of the original TMRI study in the northern region.[1] TMRI had been implemented as a randomized controlled trial (RCT). Households in our phone survey had been assigned to one of the following groups from 2012-2014: (1) Cash, (2) Food, (3) Cash + nutrition BCC, (4) Control, meaning no intervention. The 2021 phone survey successfully re-interviewed 1,731 of these households.

Because TMRI was an RCT, and because we find that attrition from the original sample to the phone survey sample was low (13% from baseline, or less than 2% per year) and uncorrelated with the intervention arm, we can compare differences between the arms in 2021 and attribute them as caused by the different interventions.

In this brief, we present results on households' phone survey responses on food security and related outcomes in 2021. For each core result, we show a bar graph displaying mean values for our sample in each of the intervention arms. We also present 95% confidence intervals, which tell us the range of values within which we are 95% confident that the "true" mean for that intervention arm lies. These confidence intervals allow us to infer whether results are significantly different across the arms in November 2021. If the ranges overlap, then we cannot conclude that the different arms have significantly different effects even if the sample means appear different. However, if the ranges do not overlap across two different arms, we conclude

[1] For budgetary reasons, we were unable to re-interview the sample in the southern region.

that the mean values in those arms are significantly different, and the different treatments caused these significantly different impacts.

Results

Food insecurity

The survey included eight questions on household food insecurity in the previous 30 days, capturing whether households reported behaviors and experiences related to difficulties accessing food due to resource constraints.[2] We use responses to these eight questions to construct four categories based on the Food and Agriculture Organization's (FAO) Food Insecurity Experience Scale: (a) no food insecurity; (b) mild food insecurity; (c) moderate food insecurity; and (d) severe food insecurity.

We focus first on the prevalence of any food insecurity (mild, moderate, or severe) across the different arms in our sample of prior TMRI participants. Figure 1 shows that large shares of households in all former treatment and control arms face food insecurity in November 2021, with the prevalence of any food insecurity ranging between 88% and 94%. There is no statistically significant difference between the arms.

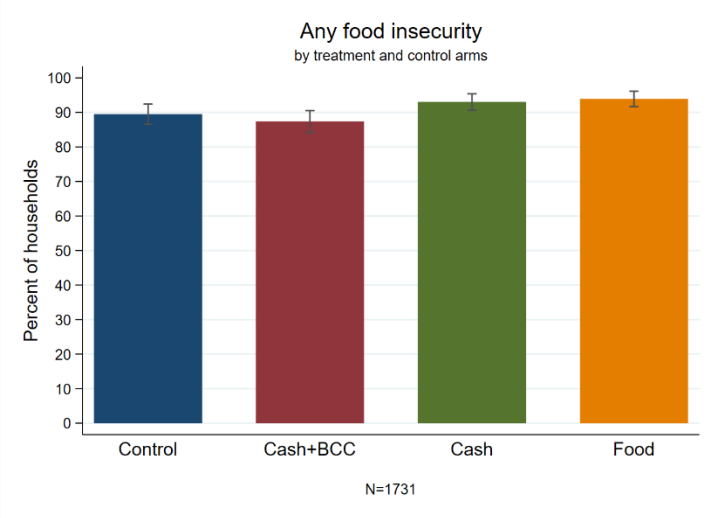

Figure 1. Prevalence of any food insecurity in the past 30 days, by arm, in November 2021

However, a different picture emerges when we consider moderate or severe food insecurity. Figure 2 shows that receiving Cash+BCC from 2012-2014 significantly reduces the prevalence of moderate or severe food insecurity in November 2021 relative to the control group. Compared to around 46% of households in the control group, only 30% of households in Cash+BCC report experiencing moderate or severe food insecurity in the previous month. Prevalence of moderate or severe food insecurity in the former Cash or Food arms does not appear to significantly differ from the control group. Figures 1 and 2 together signify that prior receipt of Cash+BCC has helped households stay in the category of mild food insecurity, rather than sliding to more severe forms of food insecurity experienced by other arms.

[2] For example, households were asked if at any point in the last 30 days they were worried about not having enough food to eat, skipped meals because the household lacked money or other resources to access food, had been hungry but did not eat, or gone without food for an entire day.

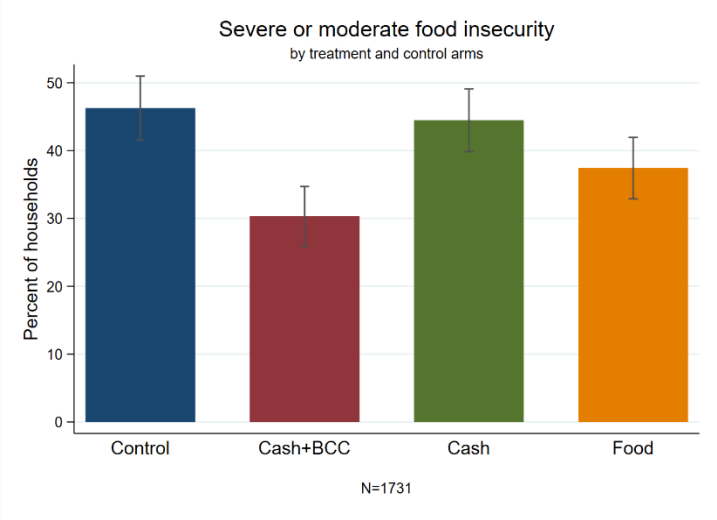

Figure 2. Prevalence of moderate or severe food insecurity in the past 30 days, by arm, in November 2021

To understand what underlies these patterns on food insecurity, we look descriptively (without confidence intervals or inferences on statistical significance) at the proportion of households in each intervention arm that report experiencing each of the eight individual items. Figure 3 indicates that receiving Cash+BCC from 2012-2014 leads households to be less likely than other arms to be unable to eat healthy/nutritious food, eat only a few kinds of food, or eat less than they should have in November 2021. On the other hand, Figure 3 shows that all arms have a high proportion of households worried about not having enough food in the previous 30 days. Together, these patterns suggest that high levels of worry across all former TMRI intervention arms contribute to the high rates of any food insecurity across all arms; however, having received Cash+BCC from 2012-2014 helps households protect their dietary diversity and thus leads to much lower prevalence of moderate or severe food insecurity in November 2021.

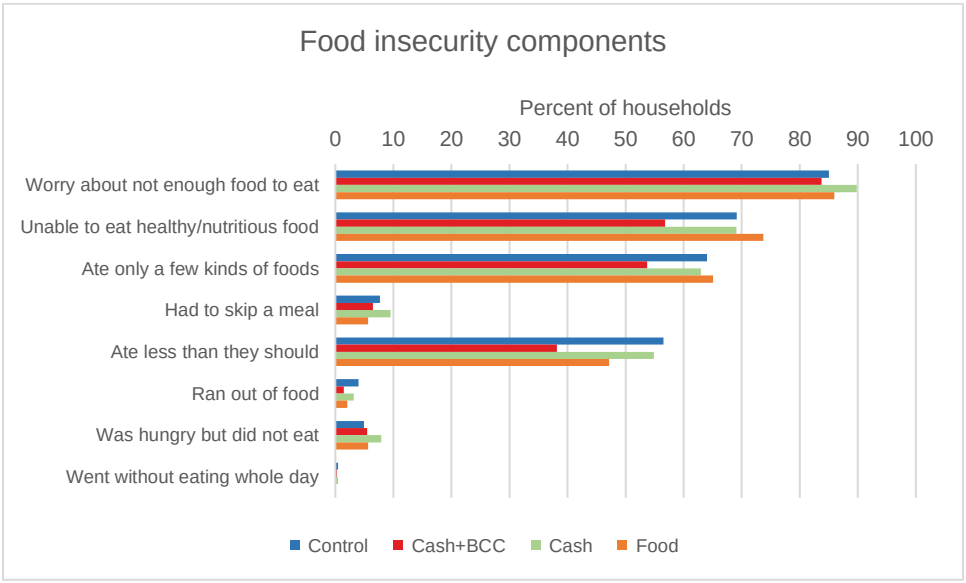

Figure 3. Proportion reporting experiencing each food insecurity component in the past 30 days, by arm, in November 2021

Dietary diversity

We next look directly at households' reports about their diets. In the November 2021 phone survey, respondents were asked if their households had consumed each of the following food groups in the preceding seven days: cereals, tubers, pulses, fruits, vegetables, meat/fish, eggs, dairy, oils/fats, sugars, tea. Results not shown here indicate that nearly all households in all arms report consuming many food groups at least once in the previous seven days, including cereals, tubers, pulses, vegetables, meat/fish, oil. However, Figures 4, 5, and 6 show that a significantly larger share of former Cash+BCC households report having consumed eggs (more than 85% vs. about 75% in the control) and dairy (more than 65% vs. about 50% in the control), as well as slightly more report consuming fruits (more than 95% vs. about 90% in the control).

These patterns are consistent with prior findings that Cash+BCC households had more knowledge about the importance of animal source foods and micronutrient-rich fruits. Potentially these households continued to have more access to these foods even during lockdowns through their own production, via livestock- and poultry-rearing and homestead gardening.

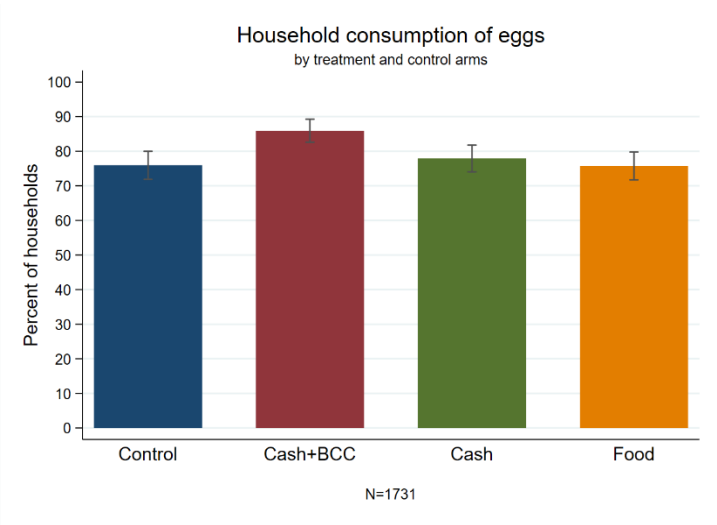

Figure 4. Proportion of households reporting consuming eggs in the past 7 days, by arm, in November 2021

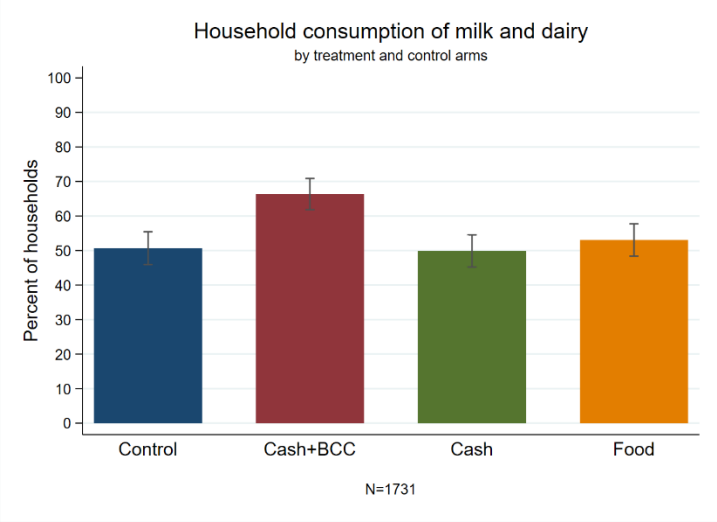

Figure 5. Proportion of households reporting consuming milk and dairy in the past 7 days, by arm, in November 2021

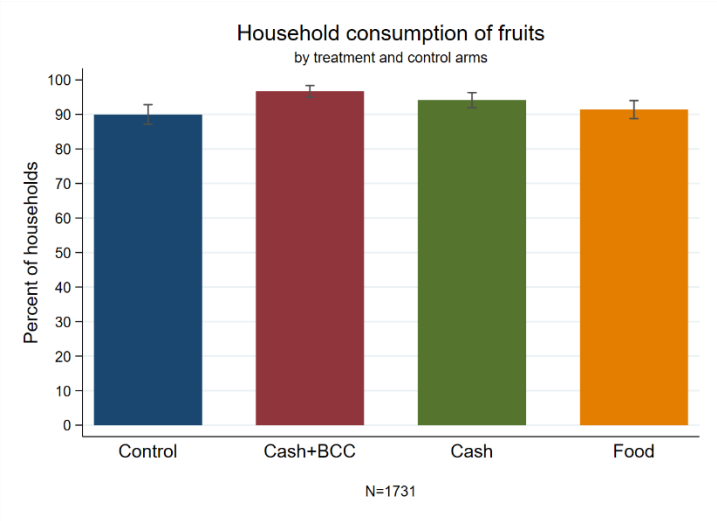

Figure 6. Proportion of households reporting consuming fruit in the past 7 days, by arm, in November 2021

Earnings

To understand what effects on income households were facing in November 2021, the phone survey asked respondents how earnings of the household's main earner from the previous week compared with the same time of year pre-pandemic, as well as whether the main earner was unemployed in the previous week. Figure 7 indicates that similar shares of households in all former TMRI arms experienced lower earnings in November 2021 – more than 50% of each arm. However, Figure 8 shows that Cash+BCC was slightly less likely to have the main earner be completely unemployed in the prior week (7% compared to about 10% in the control). Thus, receiving Cash+BCC from 2012-2014 did not meaningfully change the share of households experiencing lower earnings in November 2021 than pre-pandemic levels, but led to slightly more main earners who remained employed. This could be consistent with more home production in the former Cash+BCC arm and potential access to other types of employment over time.

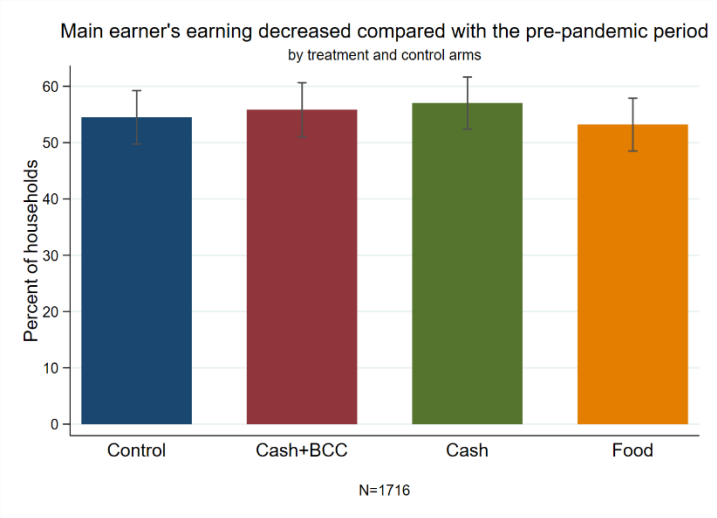

Figure 7. Proportion of households reporting the main earner had lower earnings in the past 7 days than at a similar time of year pre-pandemic, by arm, in November 2021

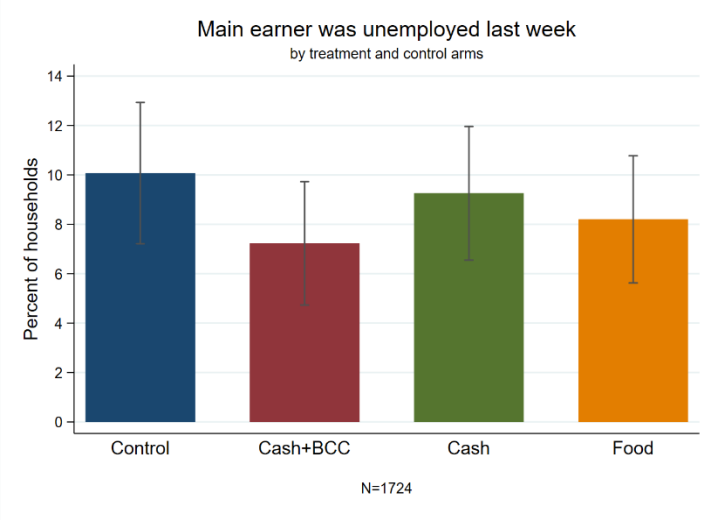

Figure 8. Proportion of households reporting the main earner was unemployed in the past 7 days, by arm, in November 2021

Stress

Bangladesh's devastating third wave of COVID-19 brought with it many sources of stress: the surge of cases, hospitalizations, deaths, associated lockdowns, and consequences for food insecurity and earnings. To assess the extent to which households experienced stress over the past 30 days in the November 2021 phone survey, we administered an adaptation of a standard instrument, the Perceived Stress Scale (PSS).[3] We standardize the responses within our sample: rescaling the control group to 0, and assessing impacts in terms of how many standard deviations different each arm was from the control group's mean. Figure 9 shows that the former Cash+BCC households reflect experiencing significantly lower stress than in other arms. In particular, receiving Cash+BCC from 2012-2014 leads to experiencing 0.1 standard deviation less stress than the control group in November 2021.

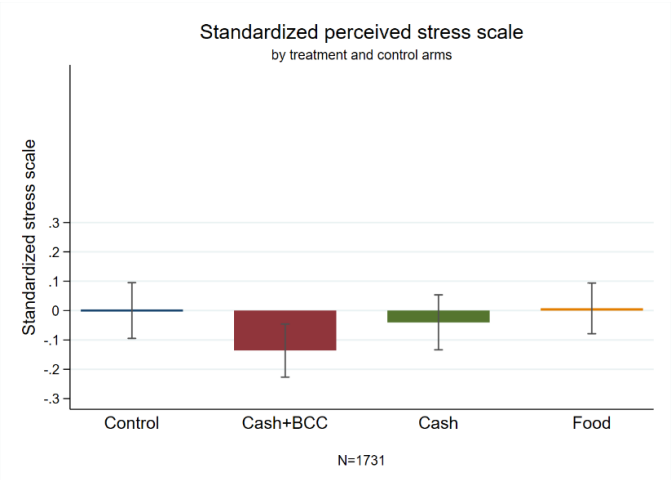

Figure 9. Standardized perceived stress scale for the past 30 days, by arm, in November 2021

[3] The PSS was adapted to make it more feasible to implement over the phone. In particular, rather than asking how often symptoms were experienced using five response options ("Never; Almost never; Sometimes; Fairly often; Very often"), we asked about four response options (dropping "almost never"). Because the raw scores are thus not straightforward to interpret, we standardize them for interpretability.

Summary and conclusion

We conducted a phone survey in November 2021 to re-interview a subset of rural Bangladeshi households that participated in an RCT of a pilot transfer program (TMRI) from 2012-2014, aiming to assess any differences in how they were faring shortly after the dreadful third wave of the COVID-19 pandemic in Bangladesh. We find that attrition is low relative to the intended baseline sample, and not correlated with treatment. This allows us to assume that differences across the arms in November 2021 are causal differences – that is, persistent effects of the different treatment arms implemented seven years earlier.

Overall, we find that households that received Cash+BCC from 2012-2014 are struggling in many dimensions, but still faring significantly better in November 2021 than those in the control group or the other arms. Although former Cash+BCC households experience similar prevalence of any food insecurity, they report significantly lower prevalence of moderate or severe food insecurity – suggesting that prior receipt of Cash+BCC helped households stay in mild food insecurity rather than a more severe state. The reduced moderate/food insecurity among former Cash+BCC households appears to be driven by a much smaller share of households reporting that they have decreased the diversity of their diets (such as being unable to eat healthy/nutritious food, eating only a few kinds of food, or eating less than they should). However, similar shares of former Cash+BCC households and households from the other treatment arms and the control group experience milder dimensions of food insecurity, such as worrying about having enough food.

Moreover, former Cash+BCC households report a more diverse diet in November 2021 – being significantly more likely to consume eggs, dairy, and fruit in the previous seven days. This finding is consistent with Cash+BCC households potentially being more knowledgeable about the importance of animal source foods and micronutrient-rich fruits and having more access to these foods during lockdowns via their own production, which were discussed in the BCC sessions.

Former Cash+BCC households have not been spared declines in income due to the pandemic, with similar shares of households across the arms reporting decreased earnings for the main earner in November 2021 relative to similar times of year pre-pandemic. However, main earners in the former Cash+BCC households are slightly less likely to be unemployed, possibly consistent with more home production and potential access to other types of employment over time.

Moreover, former Cash+BCC households report experiencing significantly less stress in November 2021. Given growing evidence on the relationship between psychological well-being and poverty (Ridley et al. 2020), this finding is promising for potential for recovery.

Prior work on TMRI has shown that receiving Cash+BCC from 2012-2014 led to sustained poverty reduction in 2018 (Ahmed et al. 2020). However, it is striking that these advantages persist in November 2021 even after a major shock, such as the COVID-19 pandemic.

Our findings indicate that providing poor rural households in Bangladesh with sizable cash transfers over a long duration alongside intensive complementary programming, particularly a nutrition BCC component, may help them cope with future shocks. Although such programs may be costly to implement, they may prove to be cost-effective over the longer term, given that they may reduce the severity of adverse consequences for households during shocks and make them potentially better able to recover. Given that the COVID-19 pandemic appears likely to continue in the near term, such nutrition-sensitive social protection programming for poor rural households (adapted for pandemic restrictions) could be a promising strategy to reduce both households' immediate and future food and nutrition insecurity.

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