ACTION CONTRE LA FAIM ACF INTERNATIONAL | RESEARCH for NUTRITION CONFERENCE

A cluster RCT to measure the effectiveness of cash-based interventions on nutrition status in Pakistan

Summary of conference abstract[i]

By Bridget Fenn

Bridget Fenn is an epidemiologist with a background in nutrition. She is currently a consultant for the Emergency Nutrition Network (ENN) and is Principle Investigator on the Research in Food Assistance for Nutrition Impact (REFANI) Pakistan study involving seasonal cash transfers (cash and vouchers) and their impact on childhood nutritional status in humanitarian settings.

Video footage of the conference presentation is available at http://bit.ly/2kAe7e5

Location: *Pakistan*

What we know: Evidence of the impact of cash-based interventions on nutrition outcomes is limited.

What this article adds: A four-arm (standard cash (SC), double cash (DC), fresh food voucher (FFV), control) parallel, longitudinal, cluster randomised controlled trial was implemented over six months by Action Against Hunger and ENN. Primary outcomes were weight-for-height z scores (WHZ) <-2 and mean WHZ in children under five years old. Preliminary results found a significant decrease in risk of being wasted (WHZ <-2) with DC only and significant improvements in mean WHZ for DC and FFV. All three interventions saw a significant decrease in both stunting and mean height for age. There was a significant decrease in mean haemoglobin (Hb) concentration for children and mothers in the FFV and for mothers only in the SC arm. A pathway causal analysis is underway that will greatly aid interpretation, with results available mid-2017.

Background

The Research into Food Assistance for Nutrition Impact (REFANI) consortium comprises two operational partners; Action Against Hunger (lead agency) and Concern Worldwide, and two academic/research partners; ENN and University College London (UCL). REFANI is a three-year research project funded by UK Aid and co-financed through funding from the European Commission (EU & ECHO). The overarching aim of REFANI is to increase the evidence base of cash-based interventions (CBIs) on nutrition outcomes in humanitarian settings by addressing a number of evidence gaps. The use of CBIs among humanitarian agencies to prevent wasting in children is increasing, but questions remain on how best to incorporate CBIs into emergency programmes to maximise their success in terms of improved nutrition outcomes.

The REFANI Pakistan study is a collaboration between Action Against Hunger and ENN, set in Dadu district, Sindh province. Dadu district is largely agrarian, dependent on crop production, livestock keeping and agriculture labour. The majority of the population are highly vulnerable to shocks, especially the poorest households, and there is a lack of alternative income sources, further constrained by lack of opportunities. Dadu district experiences frequent flooding, droughts and high temperatures (above 45°C).

Methods

This study involved a four-arm, parallel, longitudinal, cluster randomised controlled trial (cCRT) (registered trial number *ISRCTN107615320*). The protocol has been published[1]. Three CBIs were implemented: two unconditional cash transfers (a 'standard cash' (SC) amount of 1,500 Pakistan Rupees (PKR) and a 'double' cash (DC) amount of 3,000 PKR) and one fresh food voucher (FFV) with a value of 1,500 PKR, which could be exchanged for specified fresh foods (fruits, vegetables and meat). A fourth arm acted as the control group and received no additional intervention beyond the basic activities implemented by Action Against Hunger that were provided to all groups. The SC was set to equal the amount disbursed by Pakistan's national safety net programme, the Benazir Income Support Programme (BISP). The cash components were disbursed on a monthly basis either by mobile banks that travelled to a central location for some of the participating villages or through central banks that served a number of villages. The FFVs were disbursed to participating households at village level. All three interventions were delivered with verbal messages that children should benefit from the transfers.

The interventions were implemented over six consecutive months (July to December 2015) and targeted to mothers from poor/very poor households with a child 6-48 aged months at baseline. The implementation and the use of the CBIs were monitored both quantitatively and qualitatively through monthly questionnaires or quarterly focus group discussions and key informant interviews.

The main research question assessed the effectiveness of different CBIs at reducing the risk of undernutrition during the lean season. The primary outcomes were weight-for-height z scores (WHZ) <-2 and mean WHZ in children under five years old. The study also encompassed a mixed-methods process evaluation to help interpret the results and a costs and cost-effectiveness analysis (results not presented here).

Results

The results presented here are a summary of the short-term impact of CBIs on nutrition outcomes. The full analysis of both short and medium-term term impacts is forthcoming. The group with the higher amount of cash (DC) saw a significant decrease in risk of being wasted (WHZ <-2) compared to the control group. There were no significant differences in risk of being wasted for either SC or FFV arms. Both the DC and FFV arms saw significant improvements in mean WHZ compared to the control arm. All three interventions saw a significant decrease in both stunting (height-for-age z-score (HAZ) <-2 and <-3) and mean HAZ compared to the control group. In the FFV arm, there was a significant decrease in mean haemoglobin (Hb) concentration for children and mothers and for mothers only in the SC arm.

Lessons learned

The results have identified a number of questions that still need to be answered and for now require careful interpretation. In terms of risk of being wasted, we need a better understanding of why children in the DC arm were significantly less wasted. This will be attempted through a pathway analysis whereby different pathways in the causal framework will be quantified. It was

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not possible to establish the minimum level of cash required to have a significant effect; we can only say that this threshold falls somewhere between the amounts allocated in the SC and the DC interventions.

Regarding mean WHZ, it appears that children in the FFV arm were getting fatter but not taller, especially if interpreted with the lack of improvement in being wasted. As well as this, the Hb levels of children and mothers in the FFV arm were significantly lower compared to the control group. We had hypothesised that the FFV would impact growth and micronutrient status through increasing dietary diversity. However, while all three arms showed a significant improvement in mother and child dietary diversity, this improvement was lowest in the FFV arm (highest in the DC arm). These results suggest that something unplanned was occurring in the FFV arm. It is pos-

sible that the vouchers themselves were too restricted, being dependent on what vendors stocked (such as chicken being the only available meat). There were also anecdotal reports regarding vendors overcharging for food items redeemed against the vouchers as a way to cover their own administration fees in recovering the voucher costs. In this respect, the actual transfer amount given may have been lower.

Another question that needs to be addressed was the lack of improvement in Hb status in light of the improvements in ponderal growth and prevalence of being wasted as seen in the DC arm. The explanation for this will also be attempted through a pathway analysis.

The study setting presented a number of difficulties affecting data collection. The baseline survey took longer than expected, since recruitment of female enumerators was difficult and the data collection coincided with Ramadan and reduced

working hours. Added to this, temperatures reached 52oC, which not only affected research team working ability but also had an effect on the haemocues (this was managed).

Conclusion

The results illustrate the impacts of different CBIs on nutrition status. However, the theory of change regarding 'how' CBIs may influence nutrition outcomes in children is complex. In the RE-FANI Pakistan study, we show that it is not a straightforward task to simply interpret impact results as working or not; understanding the pathways and processes through which CBIs are implemented is essential to understand how best to implement them. Such analyses will be completed mid-2017.

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Risk factors for severe acute malnutrition in infants <6 months old in semi-urban Bangladesh:
a prospective cohort study to inform future assessment/treatment tools

Summary of conference abstract[i]

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Video footage of the conference presentation is available at: http://bit.ly/2kA6B33

Location: *Bangladesh*

What we know: The burden of acute malnutrition in infants < 6 months varies by country. Community-based case management for uncomplicated cases is lacking.

What this article adds: A recent study investigated the prevalence of acute malnutrition in infants<6m in semi-urban Bangladesh (two seasons) and undertook a prospective cohort study to describe current outcomes of identified cases at six months (180 days) of age. Prevalence of acute malnutrition was low post-harvest but increased pre-harvest; from 0.4% to 5.9% for severe acute malnutrition (SAM) and 2.8% to 10.1% for global acute malnutrition. At age six months, 24% of identified SAM cases (by eight weeks of age) and referred for available treatment (inpatient), remained severely malnourished. A range of infant and maternal risk factors for infant SAM were identified, involving breastfeeding status, the nutrition and mental health of the mother, infectious disease and water/sanitation/hygiene. A package of care is warranted in this age group.

Current WHO guidelines on severe acute malnutrition (SAM) management recommend outpatient management of uncomplicated acute malnutrition in infants under six months of age (infants <6m), in line with the now-established treatment approach for older children (WHO, 2013). However, there is a lack of practical guidance on how to identify those infants <6m at risk

and how to manage them. Current WHO case definition for SAM in infants <6m is weight-for-length of less than -3 Z-score (WLZ); visible severe wasting; and/or bilateral pitting oedema.

To inform the development of assessment tools and treatment approaches for SAM in infants <6m, a

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i   Presented at the ACF research conference, November 9th, 2016.