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Review Article

Impact of Cash Transfer on Food Security: A Review

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ABSTRACT

Cash transfer (CTs) is an increasingly popular social protection mechanism used by many developing countries to improve the food security and nutritional status of lower socio-economic groups.

This paper is a review of the literature regarding the impact of CT programs on the food security of recipient households in the developing countries, including Iran. We looked for all original studies, performed in the developing countries and published in any language, containing at least one outcome related to food and nutritional security of the beneficiary population using Pub Med, Iran Medex, SID (Scientific Information Database), ISI (Information Sciences Institute) database, INP (Iran's Nutrition Publication) Abstracts, IRANDOC and Magiran. Searches used the following terms or keywords: "household food security", "household food insecurity" and "cash transfer" on any publication published within 1990-2015.

A total of 12 studies evaluating the influence of CT programs on the recipients' food and nutrition security were identified. CT programs have the potential to deliver a range of benefits not only through reducing extreme poverty but also by providing effective support for broader human development objectives, including better nutrition, as well as health and education outputs and outcomes. The extent to which programs can have these different impacts will depend critically on the availability of complementary services, the local context, and the specifics of program design, including the transfer value. However, findings in Iran suggest that the replacement of staple food subsidies by CT has led to a significant increase in household food insecurity (especially marginal or mild food insecurity).

Keywords: Household food security, Cash transfer, Developing countries

Introduction

"Social protection" encompasses a broad set of public and private systems for protecting people against risks to their livelihoods and keeping them from falling into (or deeper into) poverty. Engender long-term, sustainable development processes in the hope of providing opportunities for people to move out of poverty and achieving higher standards of living can be achieved through interventions that invest in assets, including the health, nutrition and education of children and adults, and improved social status and rights. In addition, social protection can be seen as contributing to growth through investments in human capital, development of infrastructure, strengthening of markets, and maintenance of political stability (1).

Cash transfers (CTs) are increasingly popular social protection mechanisms used by many developing countries to improve the food security and nutritional status of lower socio-economic groups. These programs aim not only to alleviate current poverty through income transfers but also to reduce future poverty by encouraging investment(s) in human capital, education, health and nutrition. The overall objective of the program can, therefore, be seen as

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preventing the intergenerational transmission of poverty. In practice, two major types of cash transfer programs have been implemented: First, unconditional CT (UCT) that has been used mostly in the sub-Saharan Africa and also recently in Iran. In these programs, CTs are given to poor and vulnerable people with no restrictions on how the cash is spent, and no requirements beyond meeting the eligibility criteria (for example, being poor, orphan, or over 60 years of age). The primary objective is to protect current consumption or food security. By contrast, the second type, conditional cash transfers (CCTs) are delivered only on condition that recipients meet certain requirements; for instance, their children should be enrolled in school, and they must be immunized. CCTs have dominantly been used throughout the Latin American countries. Research to date has been more successful in showing short-term impacts on human capital; however, there is not much data available on achievement of the broader goal. A review conducted by the World Health Organization (WHO) on several CCT programs provided strong evidence of a positive impact on the use of health services, nutritional status and health outcomes, which are assessed by anthropometric measurements and self-reported episodes of illness, respectively. It is hard to attribute these positive effects to the cash incentives specifically because other components may also contribute (2). However, evidence from UCT of several countries has confirmed that recipients invest some of their cash transfers in education and health anyway (3). Interest in and the scope of CCT programs have grown enormously in the last 10 years (4).

Materials and Methods

A review of the literature was performed centered on the guiding question: “Are CT programs capable of affecting the food security of the recipient households?” Concerning the inclusion criteria, we looked for original studies, performed in the developing countries and published in any language, containing at least one outcome related to food and nutritional security of the beneficiary population using Pub Med, Iran Medex, SID (Scientific Information Database), ISI (Information Sciences Institute) database, INP (Iran’s Nutrition Publication) Abstracts, IRANDOC and Magiran. Both clinical (random or otherwise) and observational (cross-sectional, longitudinal, with and without control group) studies published within 1990-2015 were included.

Searches used the following terms or keywords: “household food security”, “household food insecurity“ and “cash transfer”. Additional studies (grey literature) were identified by searching the reference lists of identified articles. The abstracts of all identified studies were read to exclude those that were irrelevant. The full texts of the remaining articles were read to determine whether they met the inclusion criteria. Those publications that did not contain the required data for the review were omitted. The following information was extracted from the remaining 12 relevant studies: author(s), year of publication, place, coverage and participants, measuring outcome(s), main conclusion and methodological limitations.

Results

Based on the findings of the reviewed papers, one of the strongest and most consistent findings regarding the impact of CT programs is their contribution to reducing hunger and food insecurity. Regardless of the form of transfer, households receiving transfers average significantly higher spending on and consumption of food (5). Table 1 presents a summary of the studies on cash transfer impacts on various aspects of food security.

The impact of CTs on hunger has been most pronounced in low-income countries (LICs) where poverty is generally more severe. In these settings, households receiving additional income are particularly likely to prioritize spending on improving the quantity and/or quality of food consumed. For example, in Ethiopia, the Productive Safety Nets Program (PSNB) has improved food security in7.8 million people who were previously depended on emergency relief. The program operates in 300 rural districts facing chronic food shortage and provides food or cash for work as well as UCTs or food aid to those unable to participate in public works. Three-quarters of the participants consumed higher quantity and quality of food compared to the previous year, and 60 percent had avoided selling off their productive assets to buy food (6). Households receiving cash had better dietary diversity than those receiving food, suggesting that CTs may be more effective (7, 8).

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Table 1. Description of the studies evaluating the influence of cash transfer programs on the recipients' food and nutrition security (1990-2015)

Author(s) / year	Study design	Setting/ Program	Subjects/Sampling	Measurement Tool(s) of Outcome (FI)	Main conclusions	Methodological limitations
Baye et al. (2014)(7) and Gilligan et al. (2008)(8)	Cross-sectional survey of 195 PSNP beneficiary households	Ethiopia/ PSNP	8.3 million chronically food insecure households in 319 district with predictable cash and/or food transfers during lean months	Shortfall in caloric availability, Daily per capita caloric acquisition	Prevalence and severity of the chronic food insecurity experienced by poor households reduced	Data were collected more than one year after the program began
Seidenfeld *et al*. (2014)(9, 10)	Randomised controlled trial	Zambia/ Child Grant Programme	2,515 households (1260 treatment and 1259 control)/ randomly selected	FANTA food insecurity score	cash transfers improve household consumption, food consumption, diet diversity and food security	The increase in agricultural production did not lead to an increase in consumption of goods produced on farm
Harvey (2012), MacAuslan and Schofield (2011)(12, 13)	Simple random sample of 170 enrolled voucher recipients	Nairobi, Kenya/ Safety Net Program	5,000 households (2,000 in Korogocho and 3,000 in Mukuru)	HDDSIDDS and HFIAS	Statistically significant decrease of 23.7 percentage in severe food insecurity	The low coverage rate compared to the levels of extreme poverty
Ministry of Gender, Children and Social Protection, 2013 (34)	----------	Ghana/ Livelihood Empowerment Against Poverty (LEAP)	71,000 households in all 10 regions	----------	Food insecurity has significantly reduced (by 25 percentage points) especially for those headed by women	10 (Rural) 10 (Urban)
Dewber et al. (2015), (35)	----------	Lesotho/ Child Grant Programme (CGP)	299 households and 1 571 individuals	--------	Increased food purchases, especially for the unconstrained	Data constraints limit the possibility of understanding the time use implications
Baired et al. (2011)(36)	Longitudinal, randomized community control study of the pilot SCTS in Mchinji	Malawi Social Cash Transfer (SCT)	about 1000 households in 29 villages	A structured quantitative questionnaire	A tremendous gain in food security within intervention households.	Each of the tested outcomes yields large effect sizes that are highly statistically Significant
Roman et al., 2010 (37)	Five sets of household surveys	Zimbabwe/ Harmonized Social Cash Transfer (HSCT)	Average of 29,300 beneficiaries in almost 6,000 households	--------	ZECT had an important effect on households' monthly livelihoods.	Inability to find the same households every month and time constraints affecting monitor flexibility to travel to far apart locations.
Segal-Correa et al., 2004 (38)	Cross-sectional Study	Brazil (secondary data from PNAD)	56,037 Brazilian households with *per capita* income below R$ 260.00	Food security or mild and Moderate or severe FI (EBIA)	Increasing the value of the cash transfer by R$ 10.00 increases the family's chance of food security by 8% after adjusting for socio-demographic variables.	Cross-sectional study means no conclusions could be drawn on the effects of the program.
Vianna et al., 2005(39)	Population based cross-sectional study	14 Municipalities in Paraiba in 2005, School grant, Gas tickets,Food grant, Family grant	4,533 families	Families food security, mild and Moderate or severe FI (EBIA)	Comparing families with *per capita* income < R$25.00, a lower prevalence of severe FI in families registered in the CCTP (reduction of 4.8%), after adjusting for income.	It was not possible to classify the families on more than one minimum wage/month.
Dias et al., 2009 (40)	Population based cross-sectional study/ PBF, municipal program *Cesta Cheia*, *Família* Feliz	1 primary health care unit in a municipality in the Southeast	172 families receiving *Programas Bolsa Família* and *Cesta Cheia, Família Feliz*	Food security, mild and moderate or severe FI (EBIA)	28.0% were found to have food security and 12.0% to have severe food insecurity. Increased income lead to significant drops in food insecurity ($p < 0.01$).	Cross-sectional study means causal relationships between the dependent variable (food insecurity) and the independent variables cannot be proved.
Mascie-Taylor et al., 2009 (20)	The panel study	Bangladesh (cash-for-work programme)	Random sample of 895 households and 921control	7-day household food expenditure and consumption	Intervention households spent more on food and consumed more protein-rich food	Information on the actual quantity of food consumed by women and their children was not available,
Mohammadi et al. (2015)(31)	Longitudinal study	All recruited Iranians	Iranian targeted subsidy plan	HFIAS	Mild food insecurity has increased from 19.3% to 28.4%	Data were available only in Tehran city, not in rural areas.

HFIAS: Household Food Insecurity Access Scale
CCTP: Conditional Cash Transfer Programs
FI: Food insecurity

EBIA: Brazilian Scale of Food Insecurity
PNAD: National Household Survey; PBF: Family grant program
FANTA: Food and Nutrition Technical Assistance Project

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The Child Grant Program (CGP) is one of the Government of Zambia's largest social protection programs. The program provides a monthly cash payment of 60 kwacha (US$12) to very poor households with children under five years old. A randomized controlled trial of 2,515 households was implemented to investigate the impact of the program. CT had resulted in the overall improvement in the consumption, food consumption, diet diversity, and food security of the households (9, 10).

In Nairobi's informal settlements, Oxfam and Concern Worldwide (OCW) developed a joint CT programs to address improving food and livelihood security of the most food-insecure households in Kenya by increasing their immediate access to food and developing longer-term initiatives to improve their access to food and income security (11, 12). During the baseline assessment, almost all the interviewed households (97.4%, N=156) were classified as severely food insecure according to the Household Food Insecurity and Access Scale (HFIAS). By the end of the program, a statistically significant decrease of 23.7 percentage was observed. The mean HFIAS score at end-line was 13.2±4.8 compared to 18.8±3 (the highest possible score of 24 represents total food insecurity)(13).

Also an evaluation of Malawi's CT program showed that around 75 percent of the transfer had been spent on groceries (14).

A positive association between Brazilian CCT programs and improvement in the recipients' diet and nutrition have also been reported (15). CCTP have made a positive contribution, especially in tackling social inequalities, decreasing levels of malnutrition, and reducing infant mortality in Brazilian municipalities (16).

Whilst there are variations across programs; on average, roughly half the value of transfers is expected to be spent on food, one third on household expenses, and the rest on health, education and savings or investment. A synthesis of findings from surveys in sub-Saharan Africa found that in six out of the seven programs reviewed, the primary use of CTs was to purchase food (17). This increase in expenditure and food availability can translate into improvements in nutritional indicators, particularly for vulnerable groups. In South Africa, econometric analysis of anthropometric survey data estimates that a boy receiving the Child Support Grant in early childhood (specifically for two thirds or more of the first three years of life) obtains an increase in height-for-age at age 3 which can be expected to result in an average of 3.5 cm gain in height as an adult (18).

In Nicaragua, after two years, malnutrition in children in the households receiving CTs from the RPS (conditional cash transfer (CCT) program) reduced 1.7 times greater than the national trend (19). Also in Lesotho, 48 percent of the old age pensioners reported that they never went hungry after the introduction of the old age pension, compared to the 19 percent before (14).

In Bangladesh's Chars Livelihood Program (CLP), nutritional surveys in 2009 found that children of earlier recruits into the cash and asset transfer program were, on average, less stunted and underweight than the later recruits (5). A cash for work program with no complementary nutrition program showed a significant impact on growth after an average of just 10 weeks among women (mid upper arm circumference 2.3 mm larger and body weight 0.88 kg higher than in the control group) and children (0.12 mm and 0.17 kg weight for age). Intervention households spent more on food and consumed more protein-rich food at the end of the study (20).

Most studies quantifying the impact of CTs on nutrition, hunger or food security identify a positive impact though a wide range of methodologies are used, making it difficult to generalize about the size of impact. A detailed review of the links between transfers and improved child nutrition by Save the Children (SCF) has identified how CTs can address the causes of malnutrition (in particular the economic determinants of chronic malnutrition) at immediate, intermediate and structural levels (21). The 2009 SCF report found that the size of gains in child nutrition arising from transfer programs depend on three key design features: the duration over which the transfer is received, the age of recipient (given the importance of the window between 0–24 months of age), and the size of transfer. Conditionality may also be a factor as whether complementary services are offered alongside (e.g. nutritional supplements). For example, a UCT program in Mozambique showed little or no

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impact on nutrition, probably because of the low value of the transfer (£1.2 to £2.4 per month, less than a third of household expenditure). A CCT in Honduras showed little impact, which is similarly considered to be due to low transfer value and lack of complementary services.

In some cases, CTs also generate a positive impact on the supply of food. CTs can affect local markets, by generating increased demand that can, in turn, trigger a supply response by local producers (22). In remote rural areas of South Africa, CTs have stabilized the demand for food, reduced market risk for producers and traders, and supported local agricultural production (23). Households receiving South Africa's Child Support Grant, for example, have demonstrated greater resiliency in maintaining agricultural production (22). Recipients of Bolivia's BONOSOL program in poor rural areas experienced an average increase in food consumption of almost 165 percent of the value of the transfer. This was achieved through the investment of part of the transfers in much needed agricultural inputs. Conversely, where markets are not able to respond by increasing supply in this way, CTs can have a negative impact by pushing up local prices. In Ethiopia, evidence from the Meket Livelihoods Program (MLP) demonstrates that shifting from food to cash-based transfer programs had negative implications for the availability and price of food in local markets, especially in remote, food-deficit areas, undermining prospects for both graduation and growth (24).

The Iranian targeted subsidy plan, also known as "The Subsidy Reform Plan" was passed by the Iranian Parliament in 2010. The goal of this plan was to replace subsidies on food and energy (80% of total) with targeted social assistance in accordance with the Five Year Economic Development Plan (2010-2015) and a move towards free market prices in a 5-year period (25-27). Previous studies on the effectiveness of food subsidy before cash transfer in Iran have indicated the positive effect of staple food subsidy on the energy and protein intake of low socio-economic groups (28, 29).

In the study conducted by National Nutrition and Food Technology Research Institute (NNFTRI) and Academy of Medical Sciences (AMS), aimed at evaluation of subsidy targeting program through CT on the food security and expenditure of urban population in Tehran by using a mixed method, the population included households from six districts with different socio-economic status in the city of Tehran. Data gathered in both periods, 2009 (before) and 2012 (after) implementation of the policy, included: a) Demographics and household expenditure; b) Food security by previously validated Household Food Insecurity Access Scale (HFIAS)(30); and c) Dietary intake by three consecutive 24-hour recalls. In addition, data on household coping strategies were collected through 7 focus group discussions with women from different districts. The discussions were audio taped and transcribed.

The frequency of food secure households has declined from 56.4% to 43.5%, mild food insecurity has increased from 19.3% to 28.4%, moderate food insecurity has risen from 13.3% to 15.5%, and severe food insecurity has grown from 11% to 12.5% in the second measurement. Consumption survey showed significant decrease in consumption of fruits, meat and dairy groups after changing commodity subsidy program to CT in the households residing in Tehran ($p<0.0^{\circ}$)(31). Most of the women studied reported strategies like loaning or borrowing from family and friends and spend the savings to compare the increased food and other prices such as transporting and fuel. In the face of initial manifest goals of the subsidy-targeting program through CT to reduce social inequalities and poverty at multiple levels, this program has, in practice, increased the relative deprivation and social gaps in the residents of Iranian metropolises like Tehran (32).

Although CT appears to enjoy many advantages over in-kind transfers, the recent evidence shows that CTs might be inappropriate in weak economies, and most CT programs have been unable to raise payment rates in line with price inflation (Table 2 and Figure 1)(33).

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Table 2. Cash versus food transfers: advantages and disadvantages (33)

Food	Cash
Advantages	
• Donor food surpluses are available • Immediately increases food availability • Directly addresses nutritional deficits • Can be self-targeting • Usage favours women, children, older persons • Lower security risk	• More cost-efficient than food • Beneficiaries choose what to spend on • Encourages production • Stimulates the market
Disadvantages	
• High transport and storage costs • Losses from spoilage and theft • Less easily exchanged than cash • Might discourage local production • Competes with local markets and trade	• Limited donor resources are available • Losses from inflation • Can be used for non-food consumption • More difficult to target • Usage favours men • Heightened security risk

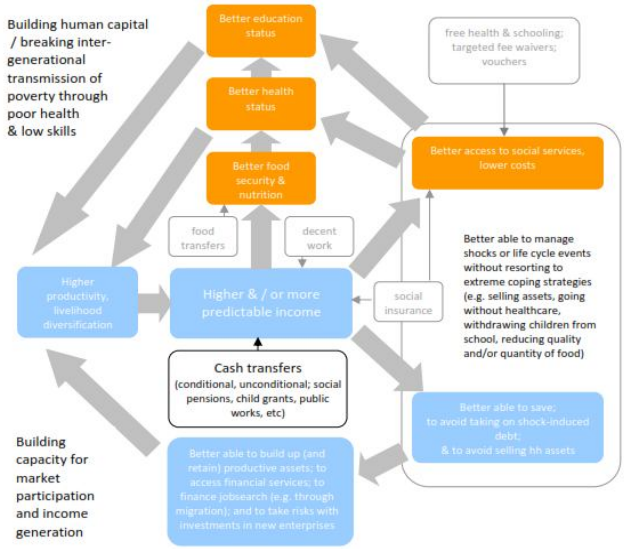

Figure 1. Causal pathways by which cash transfers can improve household welfare (5).

Conclusion

In sum, CT programs have the potential to result in a range of benefits, from reducing extreme poverty to effective support for broader human development objectives, including better nutrition, as well as health and education outputs and outcomes. The extent to which programs deliver these different impacts will depend critically on the availability of complementary services, the local context, and the specifics of program design, including the transfer value. There is some, more limited, evidence that well-designed CT programs can contribute to women's empowerment, local economic activity, strengthening the 'contract' between the citizens and the state, and supporting climate change adaptation. This is principally a result of needing to focus more in these areas in program monitoring and evaluation, rather than a failure to find results in these areas in existing evaluations.

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