

BMJ Open Cash transfer programmes in lower-income and middle-income countries: understanding pathways to nutritional change – a realist review protocol

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ABSTRACT

Introduction Child malnutrition continues to be a significant global public health concern. Nutrition-related interventions have changed and diversified over the last two decades, with increasing emphasis on nutrition-sensitive programmes that address underlying determinants of child malnutrition. Cash transfer programmes (CTPs) are used with increasing popularity in lower-income and middle-income countries to improve both food/nutrition insecurity and resilience. Available studies, however, provide mixed findings on the outcomes of CTPs for child nutritional status. This review is the first stage of a research project to develop evidence-informed theories of how CTPs affect child malnutrition. These will be empirically tested in the field and contribute to a better understanding of how, why, for whom and in what circumstances CTPs can be implemented to optimise impacts on child nutritional status.

Methods and analysis This realist review is informed by available standards for realist reviews and follows a five-step process. In step 1, an initial scoping of literature identified potential contextual factors and underlying mechanisms that influence nutritional outcomes, and potential theories developed to address our research question. In step 2, a systematic literature search using multiple databases will be undertaken with papers screened using defined inclusion/exclusion criteria. In step 3, included studies will be appraised, data extracted into a bespoke data extraction tool and used to test and further refine our explanatory framework. The fourth step will synthesise, using a mix of inductive and deductive analytical processes to identify patterns, link chains of inference and tracking and linking of articles. The final step involves dissemination of a preliminary theory for feedback prior to empirically testing it in Kenya and Ethiopia where large-scale CTPs are being implemented.

Ethics and dissemination This review will not involve primary data collection. Findings will be presented in accordance with Realist and Meta-Narrative Evidence Synthesis: Evolving Standards guidelines and published in a peer-reviewed journal.

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BACKGROUND

Poor nutrition in low-resource countries continues to be an underlying cause of at

Strengths and limitations of this study

- The use of realist review methods enables explicit examination of contextual factors and underpinning mechanisms to explain how various cash transfer programme (CTP) implementation structures, services and practices influence child nutrition outcomes.
- The review will develop a programme theory and a set of specific hypotheses relating context–mechanism–outcome as a summary of current understandings that can be empirically tested through the collection and analysis of primary data.
- The method includes a broad range of evidence from various data sources, including grey literature, while strengthening understandings of context may also affect data quality.
- Realist reviews can be difficult to reproduce, we have sought to mitigate this risk through specification of criteria and approaches that support structured and reproduceable decision making.
- The findings will not produce generalisable effect sizes but may be used to inform future empirical studies.

least one-third of all child deaths and approximately 20% of maternal mortality annually.¹ Nutrition-related interventions have changed and diversified over the last two decades, with increasing emphasis on nutrition-sensitive programmes that address the underlying determinants of child malnutrition. Cash transfer programmes (CTPs) are used with increasing popularity in lower-income and middle-income countries to improve both food/nutrition insecurity and resilience.² Available studies, however, have provided mixed findings on the outcomes of CTPs on child nutritional status.^{3–7} This review is the first stage of a research project that will consider current evidence and understanding of CTPs to develop programme theories to summarise the ways in which large-scale CTPs affect child malnutrition. The pathways

considered to be most influential and/or important will form the basis of specific hypotheses to be empirically tested in the field in subsequent work.

The numerous factors that contribute to poor child nutrition in lower-income and middle-income countries are summarised in a conceptual framework developed by Unicef and categorised as basic determinants (eg, political and economic structures), underlying (eg, direct influences on household food security/health environment/care for mothers and children) and immediate determinants (eg, child's dietary intake and child's health status).⁸ As with other social determinants of health, addressing child nutritional status requires interventions targeting child health and the structural, environmental and resource related causes (ie, underlying and basic determinants), affecting child nutritional status.⁹ Based on this framework, interventions to improve maternal and child nutrition are typically categorised as nutrition sensitive or nutrition specific.¹⁰ Nutrition-sensitive strategies aim to address the underlying and basic determinants of child nutritional status and include asset support and social protection initiatives as well as agricultural, infrastructure development and education programmes.¹⁰ These can support nutrition-specific interventions, such as feeding programmes and typically target women of reproductive age, pregnant and lactating women (PLW) and children under the age of 5 years.¹¹ Children under the age of 5 years are the most vulnerable to malnutrition and associated morbidities, and the prevention of largely irreversible outcomes (ie, failure to thrive/stunting) must be addressed in the first 1000 days of life, from conception to 2 years of age.¹⁰

Over the last two decades, external donors, policy makers and national governments of lower-income and middle-income countries have increasingly used social protection programmes, including cash transfers, in combination with other targeted programmes to alleviate chronic and acute food and nutrition insecurity and the underlying social determinants of health in vulnerable populations.^{12 13} CTPs are non-contributory social protection programmes that provide monetary transfers to low-income households seeking to health and welfare decisions and outcomes through an 'income effect' and through this to break the 'intergenerational cycle of poverty'.¹³⁻¹⁵ They can be categorised into two groups: conditional cash transfers (CCTs) or unconditional cash transfers (UCTs).¹⁴ The monetary transfers for CCTs are conditioned on recipients complying with a set of behavioural requirements, generally addressing financial barriers associated with accessing social services, such as school enrolment/attendance or health services.^{13 14} UCTs also target low-income individuals or households with monetary transfers but do not require recipients to meet a set of conditions.¹⁴ CTPs can also include a combination of monetary transfers and in-kind assistance (eg, food rations) and vouchers (for food or other commodities).^{14 16} The modality and duration of CTPs differ by context. CTPs for assistance in humanitarian disasters

are often one time/short duration and focus on short-term objectives (eg, relief from a disaster). A second modality of CTPs are regular and ongoing cash transfers in development settings focused on poverty reduction and addressing vulnerabilities with a possible graduation from the programme.¹⁴ Other contextual factors that influence the CTP include the social policy environment, availability and accessibility of complementary health and welfare services, sociodemographics of the population, existing behaviours of recipients and organisational capability and capacity.¹⁴ The nutritional objectives also differ by context with short-term programmes in a humanitarian context generally framed as addressing acute nutritional outcomes such as a reduction in child wasting, while the ongoing programmes generally identify longer term nutritional outcomes such as ameliorating child stunting.

Latin American countries, including Mexico and Brazil, were among the first lower-income and middle-income countries to implement CCTs to reduce financial barriers to accessing services for low-income individual and households.¹⁶⁻¹⁸ Introduced in the late 1990s, impact evaluations and systematic reviews conducted since have demonstrated positive impacts on access to health and nutrition services and poverty reduction; however, there have been mixed results regarding child nutrition outcomes.^{3 19} With the increasing uptake of CTPs in lower-income and middle-income contexts, such as sub-Saharan Africa and Asia, further studies have demonstrated positive outcomes of CTPs on household food security, food consumption, agricultural yields, poverty reduction and asset protection^{3 5-7 20-23} yet expected nutrition benefits (eg, reduction in wasting and stunting rates of children under 5 years) have not been clearly demonstrated.^{1 3 24 25}

Several research teams have considered this issue.^{1 3 24 25} While the studies differ in purpose, design and approach, they each propose pathways by which increased income and/or financial incentives can affect the underlying determinants of child nutrition status and identify various mediating, moderating or modifying variables that may influence the effect of each pathway on the immediate determinants of child nutrition.

The framework by de Groot *et al*,²⁵ for example, suggests ways that the addition of financial resources can influence the underlying determinants of child nutrition through the three pathways of food security, health and care. The model presented by Leroy and colleagues,³ although focused on the impact pathways of CCTs, has similarities to the de Groot conceptual framework. Leroy and colleagues outline how the addition of financial resources can make it easier for a household to purchase higher quantities and quality of food (household [HH] food security), increase access to health services (health) and increase women's control over income and empowerment (care). Each framework highlights possible mediating/moderating/modifying variables that could interrupt the underlying pathways influence the immediate determinants of child nutrition, shocks, feeding practices and feeding styles, women's time (eg, additional travel

required to collect cash and meet conditions of CCTs), availability of food and food prices and existing resources for health, can have either positive or negative influences on the impact of cash transfers on child nutrition. The Research on Food Assistance for Nutritional Impact (REFANI) theory of change²⁴ also maps the pathways but provides a deeper insight into household choices related to income use and how these might activate mechanisms of change to generate nutrition-related outcomes. The researchers^{23 5 6 24 25} have identified several gaps in knowledge that warrant further research, examples include: caregiver behaviour (including feeding practices), quality of health and nutrition services, child dietary intake and dietary diversity, individual food security, the costing and cost-effectiveness of cash transfers in the reduction of child undernutrition.

While each of the models incorporate overarching contextual factors, how context affects the pathways to generate outcomes remains underdeveloped. This is an important gap as implementation structures and programme environments for CTPs with nutrition objectives are heterogeneous. The systems for implementation, for example, may include multiple government and non-government agencies and be provided to a diverse range of recipients. Cash transfers take numerous forms: conditional/UCTs/in-kind assistance/vouchers. Furthermore, access to complementary health and welfare services varies.

Using a realist approach to develop an initial programme theory, the evaluation conducted by Owusu-Addo *et al*¹⁴ of cash transfers and the social determinants of health in Ghana expands the knowledge of the interplay between context, potential mechanisms and health outcomes. The authors hypothesise that CTPs have a strong impact on poverty reduction and improve access to services; however, significant changes are needed to improve programme impacts on the social determinants of health.¹⁴ The recommended changes are similar to the findings from the nutrition research (ie, addressing household motivation, risk-taking behaviour, intersectoral collaboration and programme awareness). The authors provide a programme theory that can be tested and refined in future studies, such as for the realist review proposed herein.

As discussed in the paper by Floate *et al*,²⁶ the use of a realist approach in combination with a theory of change (eg, the REFANI theory of change) can assist in identifying underlying mechanisms and explore the interplay with contextual factors that result in both planned and unplanned outcomes. While re-examining the frameworks from earlier research using a realist enquiry, we will extend them by explicitly considering how the various CTP programme elements and implementation structures influence the pathways that affect the determinants of child nutrition.

The review and evidence synthesis outlined in this protocol is the first stage of a research project that employs a theory-driven realist approach.²⁷ The programme

theories developed in this review will be empirically tested in Kenya and Ethiopia (currently implementing large-scale CTPs). To our knowledge, this is the first realist review of the impact of CTPs on child nutrition status.

METHODS

Realist review methodology

The realist approach to synthesising evidence has become accepted as a rigorous alternative method to systematic reviews, where the intent is to understand causation. Other forms of systematic reviews were investigated (eg, meta-analysis); however, while providing information on outcomes, other methods often fail to explain how or why programmes worked and do not easily account for the complexity found in real-world nutrition-related CTPs.²⁸

Publication standards have been issued by the Realist and Meta-Narrative Evidence Synthesis: Evolving Standards (RAMESES) project, and realist reviews are used with greater frequency in complex intervention evaluations, such as CTPs.^{14 29–31} The approach is a theory-based approach to understanding ‘what works for whom in what circumstances’ and, importantly, *why and in what context?*²⁷

The realist approach as proposed by Pawson and Tilley²⁷ is based on a specific philosophical approach, that is, realism and, more specifically, scientific realism, sitting somewhere between positivism (the belief that knowledge must be scientifically tested with systematic mathematical or logical proof) and constructivism (the theory that knowledge is constructed by humans through their own experiences).^{32 33} The approach is based on the understanding that there is a social reality, but this is socially constructed. Outcomes (O) are generated by mechanism(s) (M) that are triggered within certain contexts (C). The mechanism(s) from a realist perspective (in socially contingent interventions) is usually hidden and is the reaction or response of people to resources introduced by the intervention within a certain context and can be enabling or disabling. Context relates to the setting in which the programme operates, including systems such as health, political, environmental and social systems. The context can have several layers and can be separated into the outer and inner contexts of an intervention.

In a realist approach, the researcher seeks to understand interventions through the concept of generative causation that is hypothesised and tested through context–mechanism–configurations (CMOs).³⁴ A key task for the researcher is to identify situations where interventions have had effective and/or ineffective implementation, achieving either planned or unplanned outcomes, and to examine the causes of these.³⁵ Typically, to achieve this differentiation, potential theories (or candidate theories) of the CMOs in which a programme is or will be implemented are generated throughout the review to account for the processes of an intervention that lead to an outcome.³⁶ CMO configurations and potential theories are then analysed to inform the creation of protocols for data collection for the review and

analysis. Realist evaluations typically use data from various sources, including qualitative, quantitative or mixed methods studies. An evidence-informed programme theory answering the realist question of what works, for whom and under what circumstances is the result of the inquiry.²⁷ All phases of a realist inquiry are iterative to allow for constant refinement of potential theories and CMOs. Developing and testing CMO configurations can help ensure external validity, by enabling a level of abstraction for the theory, or theories, that can be useful in other contexts.

A realist synthesis, which is synonymous with the realist review, applies a realist philosophy to collate findings from various studies that are related to either a single research question or a collection of questions.^{37 38} The steps of a realist review, as recommended by Pawson *et al*,³⁴ are as follows: (1) clarifying the scope of the review; (2) searching for evidence; (3) appraising primary studies and extracting data; (4) synthesising evidence and drawing conclusions; and (5) disseminating, implementing and evaluating. All phases of a realist inquiry are iterative to allow for constant refinement of potential theories and CMOs. Step 1 of the review has been completed, and step 2 is currently in progress.

Protocol and review methods

The approach for this protocol has been informed by peer-reviewed realist review protocols published in the last 10 years, RAMESES guidelines and the work of Ray Pawson.^{27 34 37 39–49} We conducted a search of databases such as MEDLINE, Scopus and Google Scholar, using search terms including ‘realist review’ and ‘protocol’. Our search yielded 68 records, of which eight were found to be pertinent for our review.^{28 39–42 47 49 50} Relevant protocols were chosen based on similarities in programme contextual factors, such as national operating systems, multiple implementing agencies, multifaceted causal chains and potential outcomes. These have informed the protocol below. The review commenced in October 2018, with completion estimated to be in June 2019.

To ensure rigour and relevance, we adopt accepted and validated analytic techniques, for example, the Mixed Methods Appraisal Tool (MMAT),^{51 52} which are described in more detail in steps 3 and 4 of this protocol. The use of these techniques will allow us to compare and consolidate key multidisciplinary implementation attributes and their relationships.⁵⁹ We used the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols checklist when writing our report.⁵³

Review objectives

To understand the relationships between large-scale CTPs and child nutritional status, the objectives of our review are to:

1. Identify the programme theories underpinning the designs of CTPs with nutrition objectives, targeting children under 5 years and PLW in lower income and middle-income countries.

2. Identify the mechanisms that explain how CTPs affect child nutrition in lower income and middle-income countries.
3. Examine how key contextual factors, (including implementation structures, programme components and recipient characteristics) interact with resources (ie, cash transfer and supporting services) and participant reasoning to generate child nutrition outcomes.
4. Propose how and why CTPs affect or do not affect child nutrition in lower income and middle income countries.

Patient and public involvement

The public and/or patients were not involved in this stage of the research project.

STEP 1: CLARIFYING THE SCOPE OF THE REVIEW

Clarifying the scope of review involves understanding the nature and content of the intervention, including its purpose and expected outcomes or impacts. It is often undertaken using an initial literature review and in discussion with practitioners and experts in the field. The purpose of this stage is to develop a framework for examining and synthesising evidence from diverse sources³⁴ and begin to identify key words and concepts. In this review, the initial theoretical and conceptual frameworks of how nutrition sensitive programmes are theorised to influence child nutrition status were identified based on an initial review of the literature, discussions with relevant stakeholders (eg, donors, community members and development practitioners) working in nutrition and food security and the first author’s practical experience. The initial literature search revealed four potentially relevant frameworks.^{1 3 24 25} Based on these frameworks and the Unicef conceptual framework,^{1 3 8 24 25} and complemented by stakeholder interviews and practical experience, we identified common themes across the frameworks and possible gaps in knowledge. We then mapped the proposed pathways and underlying assumptions of how CTPs influence child nutritional status in a conceptual framing exercise (using the Unicef and other relevant frameworks as our foundation) and then began the process of identifying potential CMO configurations and potential theories. This provides an initial rough programme theory to inform our search strategy and to find the data needed to test and refine these configurations and theories.

The results included several possible CMOs, and a series of if/then statements to facilitate in the creation of theories. The CMOs have been categorised into four main domains that were chosen through the grouping of common concepts and themes. The four main domains are implementation structures, contextual influences, food systems and community response, as represented in [figure 1](#). Implementation practices have been identified as a key contributing factor in CTPs achieving nutrition outcomes. Therefore, this review will also draw on the

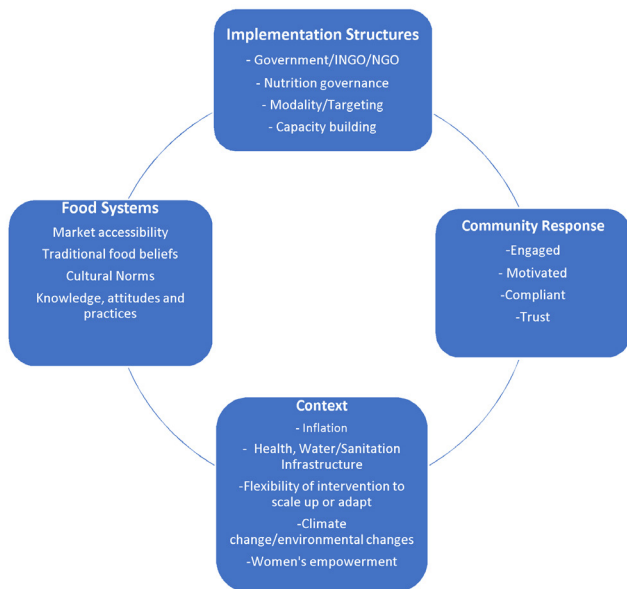


Figure 1 Theoretical framework domains. INGO, international non-governmental organisation; NGO, non-governmental organisation.

practical concepts of implementation research guidelines⁵⁴ to help with our understanding of what elements of CTPs contribute to planned or unplanned outcomes.

An example of two of our hypothesised CMOs and potential theories categorised under the domain of implementation structures and associated capacity building category are as follows:

- ▶ Nutrition education provided by a health professional (C) who is skilled in behaviour change techniques (resource M) and able to create nutrition awareness in recipients (response M) that will ensure CTP recipients provide food to their children in sufficient quantity and diversity and prevent/treat diseases, reducing chronic malnutrition rates in children under 5 years (O).
- or
- ▶ Nutrition education provided by CTP employees (eg, government workers or programme monitors) (C), unskilled in behaviour change techniques but trained in CTP protocols (resource M), deliver appropriate nutrition messages and health-seeking advice, guaranteeing CTP recipients diversify their child's daily dietary intake and prevent diseases (response M), reducing chronic malnutrition rates in children under the age of 5 year (O).

STEP 2: SEARCHING FOR RELEVANT EVIDENCE

Following specification of our potential programme theories, the next stage will be to identify relevant literature to further develop and test the theories. The aim is to identify a broad range of studies (including quantitative, qualitative and mixed methods) relating to CTPs and the programme theories.⁵⁵ The ways in which we will undertake this step are described below.

Literature search strategy

Following the RAMESES guidelines for a realist review, in this step, we will undertake an iterative approach to searching for relevant literature, allowing relevant new studies to be included continuously into findings and the overall synthesis.

We expect databases such as MEDLINE, ProQuest, Cochrane, Scopus, Web of Science, Business Source Complete, EconLit and Google Scholar to be most instrumental in our search of the extant literature. Reports and unpublished papers from the 'grey' literature will be sourced from websites such as the World Bank, Unicef, World Food Program (WFP), WHO, Food and Agriculture Organisation (FAO), 3ie Impact Database, Transfer Project, Department for International Development (DFID) and United States Agency for International Development (USAID). The search will be conducted in English; the potential theories and possible CMOs have informed the selection of search terms including, for example: cash transfer, nutrition, children, PLW, women of reproductive age, nutrition sensitive, CCT, UCT, social safety nets, financial incentives, food security, food consumption, dietary diversity, acute, chronic malnutrition, low income, middle income, social protection, implementation, World Bank, WFP, Unicef, WHO, DFID and USAID. The search strategy will include variations of the following examples of term combinations:

- ▶ 'cash transfers' AND 'nutrition'.
- ▶ 'cash transfers' AND 'nutrition' AND 'children'.
- ▶ 'cash transfers' OR 'social safety nets' OR 'financial incentives' AND 'nutrition' OR 'nutritional status'.
- ▶ 'cash transfers' OR 'conditional cash transfer' OR 'unconditional cash transfer' AND 'nutrition'.
- ▶ 'cash transfers' AND 'food security'.

All searches will be limited to those published from 1990 (reflecting the start of Latin American CTP programmes, where the first large-scale CCTs were implemented) to present.

Inclusion and exclusion criteria

As per the realist approach, in this study, we are less concerned with whether an evaluation meets traditional epidemiological methodological standards, (eg, must be a randomised controlled trial or case-control trial) but rather what type of information may be gathered from studies about how, why and for whom CTPs achieve nutritional change and under what circumstances. Our inclusion and exclusion criteria have been designed to reflect this by including a variety of studies regardless of study design. The studies will be included or excluded based on the following criteria:

Included

1. Programmes targeting children under the age of 5 years, including PLW.
2. Centrally managed programmes implemented through various systems, including national governments, international agencies and non-government organisations.

3. Programmes in humanitarian/relief and development settings with multiple sites.
4. Programmes targeting underlying determinants of malnutrition (aspects of food security, health and care) with reduction of malnutrition as a primary objective.
5. Programmes measuring at least one nutrition outcome or an immediate determinant (such as diet, nutritional supplementation rate or associated morbidities).

Excluded

1. Programmes targeting school-aged children, adolescents and adults (except PLW).
2. Welfare programmes in high-income countries.

Article screening

One reviewer will generate a list of articles and abstracts (if available) based on the search strategy mentioned above. These will be separated among the review team, consisting of two reviewers (HF and GM), and titles and abstracts will be reviewed by individual reviewers to see if they: (1) focused on CTPs (regardless of modality) and (2) appear to fit with the inclusion/exclusion criteria. Reviewers will list the articles as 'include', 'exclude' and 'maybe'.⁵⁰ In the absence of an abstract, titles of articles will be used to determine if they are appropriate for review (eg, mention of CTPs and nutrition outcomes). If the title is ambiguous, the article will remain in the 'maybe' group for the next stage of the review. As described by Velonis,⁵⁰ we will ensure inner-rater reliability, through a randomly selected number of article titles and abstracts, each being reviewed independently to determine if the study should be included. In the case of discrepancies, agreements will be reached collectively.

Following the initial screening, articles that have been labelled 'included' and 'maybe' will be reviewed a second time by the reviewers. Once completed, the reviewers will discuss and collate results; in cases where an article has been 'included' by one reviewer and 'excluded' by the second reviewer, reasoning will be discussed, and a consensus reached, where consensus cannot be reached a third reviewer will be brought into the discussion.

The complete article or paper included at this stage will then be obtained for the final stage of the screening. Inter-rater reliability will be assessed again by having the reviewers read the same randomly selected five articles, make their own recommendations on inclusion and exclusion, then meet to discuss as a group. Results will be discussed collectively between the reviewers to ascertain any differences between findings, points of difference in categorisation will be discussed and consensus reached mutually. The remaining articles will be distributed among the reviewers and skim read to make a final decision as to their inclusion or exclusion, findings will again be shared and consensus reached. Articles will be used as input for step 3 of the review.

STEP 3: APPRAISING PRIMARY STUDIES AND EXTRACTING DATA

This step seeks to refine our programme theories and CMOs following the initial screening of the literature as outlined in steps 1 and 2 of the protocol as per RAMESES and Pawson recommendations for realist reviews.^{34 42} In this step, we will seek to review the articles identified in step 2 and consider them in relation to our programme theories for integrity, adjudicate between rival programme theories and review the same theories in comparative settings.³⁴ These three strategies will facilitate in the consolidation of our programme theories. A final literature search, quality appraisal and data extraction of included studies is also included in this step of the review. For the quality appraisal, where appropriate, the MMAT^{51 52} will be used to evaluate rigour and credibility of relevant evidence we extract from each study has been generated.

Reviewing for programme theory integrity

The purpose of this strategy is to study how programmes have been implemented in what contexts and what results they have generated for whom. According to Pawson *et al.*,³⁴ in a realist synthesis, this strategy can aide in the discovery of typical weak points in the history of the programme under review. For this review, this will mean, for example, examining the history of CTPs to identify if changes and deviations in implementation structures have had an influence on child nutrition outcomes.

For example (hypothesised theory):

- ▶ CTPs implemented by national governments without external support (C) using standardised CTP protocols and clear guidelines with nutrition objectives (M resource), ensuring CTP implementers have a clear understanding of programme priorities and how to deliver them (M response), are more successful in changing traditional food beliefs (O).

Reviewing to adjudicate between rival programme theories

The purpose of this strategy is to identify which variations of mechanisms are most successful in driving different outcomes by uncovering evidence from competing programme theories.³⁴ The conceptual frameworks, potential theories and CMOs identified in step 1 of the review highlight the numerous possible pathways a CTP may improve child nutrition status. By adjudicating between rival programme theories, we will elicit key causal factors that may be driving changes in outcomes in large-scale CTPs, through analysis of both relevant literature and consultation with a range of stakeholders to identify what works for whom in what circumstances.

For example (hypothesised theory):

- ▶ CTPs provided with nutrition education training (C) are more successful in improving maternal child care practices (O) when delivered by a local midwife/traditional birth attendant (M resource) as women are more likely to trust messages given by established community members (M response).

or

- ▶ CTPs delivered through condition of attendance to maternal child health services (C), ensure women will improve child care practices (O) or they will not receive monthly cash payments (M resource) and positive nutrition awareness (M response) will only be achieved through constant monitoring.

Reviewing the same theory in comparative settings

This strategy addresses the core of realist evaluation to identify patterns in the context in which interventions interact with participant reasoning to generate outcomes.³⁴ Our theories will be compared between settings with similar CTP modalities in terms of the four domains highlighted in [figure 1](#).

For example (hypothesised theory):

- ▶ Conditional CTPs implemented by national and local governments (C) ensure attendance at maternal and child health (MCH) clinics for health and nutrition screening, provided by skilled health professionals (M resource), recipients will attend and receive nutrition education, creating positive behaviour change (M response) that will improve the nutrition status of children in recipient households (O).

or

- ▶ Unconditional CTPs provided by INGOs and NGOs (C), with positive implementation histories, will provide nutrition education programmes in conjunction with cash transfers, through skilled outreach workers (M resource) who are trusted by the community (M response) and diversify diets for children in recipient households (O).

Revisiting the literature

The purpose of a literature search in this step of the review is to further explore evidence from a wide range of programmes, including empirical studies, policy and protocol documents, evaluations, systematic reviews, grey literature (non-peer reviewed documents) from the field (eg, programme proposals, monitoring reports and donor updates) that will add to the search from step 2 in the development of our programme theories. The search in this phase will be more purposive in nature than in step 2. Reference and citation searches from articles identified in step 2 will be tracked through ‘snowballing’ search techniques to identify additional documents.³⁴ Additional articles will be selected at this stage according to whether they add to our emerging theories or areas of explanatory potential in terms of CMO patterns.⁴² New targeted search terms, not included in the original search, will be used in this stage of the literature search, as per realist evidence searching recommendations.^{42 56}

Searching for new documents will end at the point of theoretical saturation, that is, when we have established there is sufficient evidence to confirm a preliminary theory for testing in the field.³⁷

Agency project proposals, donor progress reports, protocol documents and descriptive evaluations will also

be used in the identification of effective or ineffective implementation practices.

Quality appraisal and data extraction

One reviewer (HF) has commenced searching databases as per step 2 of the protocol, and article screening has commenced. Articles and documents will be appraised by two reviewers (HF and G), independently using the inclusion/exclusion criteria described earlier.

Realist reviews require the use of a wide range of documents to contribute to the development of programme theories with quality appraisal conducted throughout the review process. Documents or parts of documents therefore are not excluded based on methodological quality but on relevance and rigour.⁵⁷ In a realist synthesis, unlike a traditional systematic review, an assessment occurs in conjunction with the assessment of the study’s relevance and related ‘programme theories’ and if the methods used to generate the data or related ‘programme theories’ were appropriate. In other words, in this study, we will seek and use different fragments of evidence within each study that are relevant to our programme theories. Each fragment of evidence will be appraised, as it is extracted, for its relevance to theory building and if the methods used to generate the data are trustworthy and credible.

Where appropriate, the MMAT^{51 52} will be used in our assessment of rigour and credibility of the way in which the fragments of evidence we extract from each study have been generated. The MMAT is recommended by RAMESES to appraise the quality of data extracted from studies as it can be applied to studies that use quantitative, qualitative and mixed methods and has been independently tested for efficiency and reliability.^{28 51 58} The principle researcher (HF) will lead the process and will share and discuss the emerging synthesis with the other two researchers (GM and JD). In addition, JD will review approximately 10% of included papers and evaluate the extracted data using the MMAT. Implementation practices have been identified as one of the key influencing factors for CTPs to achieve nutrition outcomes in our potential programme theories; therefore, we will also use, as appropriate, the Egan *et al*’s⁵⁹ implementation appraisal checklist to guide our appraisal of the quality of reporting of implementation practices from the articles included in our review. The checklist will require some modification due to differing contexts. However, several themes from the Egan *et al*’s⁵⁹ checklist are consistent with the organisational-level workplace interventions of the CTPs we are evaluating (eg, motivation, theory of change, employee support, resources provided, differential effects and population characteristics). These techniques and tools will only be applied to the relevant aspects of the studies that relate to our programme theories rather than the study as a whole.²⁸

Data extraction will focus on key CMO findings that will contribute to the further development and refinement of CMO configurations and programme theories.

Two reviewers (HF and GM) will independently read each source in full, identifying data that will contribute to theory building. A bespoke Excel spreadsheet will be developed for extracting data and will be formulated and agreed on between the reviewers. The study reviewers will use the spreadsheet to record data relevant to theory building and may include, for example, information such as: (1) document bibliographic information; (2) country of study/document, (3) the type of CTP, (4) what nutrition outcomes are measured and how they are measured, (5) what proximal outcomes (eg, improved maternal child care practices through nutrition education support) are measured and how they are measured, (6) contextual factors that are mentioned in the article, (7) mechanisms that lead to outcomes that are mentioned in the article, (8) the study design, (9) the relevance to theory building and (10) the credibility of the methods used to generate the fragments of evidence extracted from the individual studies. When extracting data, if an article does not include all aspects of the theory or data relevant to a question, 'not reported' will be recorded. Where direct quotations are extracted, the page number from which the quote was taken will be noted.

The reviewers will pilot the data extraction sheet by independently extracting data from approximately 10 articles and discuss results, the spreadsheet may need modification following this process. Data will be managed using Microsoft Excel, an annotated notebook will be kept ensuring an audit trail of decision-making is maintained. The findings of the data extraction will provide an overall impression of the depth of the data available and how much it will contribute to our programme theories.⁵⁰

STEP 4: SYNTHESISING EVIDENCE AND DRAWING CONCLUSIONS

This step will involve the identification of recurrent patterns (or demiregularities) in outcomes, mechanisms and contexts³⁷ and will be focused on addressing our research questions

A mix of inductive and deductive analytical processes will be used to identify patterns in the extracted data, which will be produced in the form of if/then statements, with the aim of linking the chains of inference and tracking and linking of articles. Two reviewers (HF and GM) will examine the if/then statements to identify recurring themes within mechanisms that will be grouped thematically (as anticipated in [figure 1](#)) as well as challenging emerging findings and seeking divergent examples. Through this iterative process, we will formulate hypotheses, linking themes to chains of inference that will subsequently be empirically tested in our field work.

The broader literature will also be used to inform and refine our emerging theories. For example, theories that may be drawn on, as per the Owusu-Addo *et al.*¹⁴ realist evaluation are capability theory (Sen⁶⁰), empowerment theory (Kabeer⁶¹) and self-determination theory (Ryan and Deci⁶²). These theories will be consistent with the

behavioural and structural mechanisms that have been identified in the causal pathways of the underlying determinants of child nutrition. Literature will be located through searches of social science and health databases, as well reviewing the reference lists of included papers and our own libraries. Searches of the literature will be undertaken purposively and iteratively, with the main criterion the ability to refine our programme theories. Search terms for this stage will be developed with the research team based on the key concepts and processes suggested to have explanatory power within the key programme theories identified.

Based on the review and analysis, the CMO configurations and aspects of programme theories considered to be the most influential and/or important for nutrition outcomes will be identified to be tested in research to be undertaken following this review involving primary data collection and consultation with experts and key programme stakeholders.

STEP 5: DISSEMINATION

The findings from the review will be presented in accordance with the RAMESES guidelines as recommended by Wong *et al.*³⁷ Findings will be published in a peer-reviewed journal. The results will be disseminated to policy makers, external donors, relevant governments and research institutes (eg, International Food Policy Research Institute [IFPRI]), through formal or informal presentations, conferences and reports.

DISCUSSION

CTPs are inherently complex, involving numerous programme components, systems for implementation, aiming to produce a variety of outcomes. They are heterogeneous interventions, ranging from CCTs to cash and in-kind assistance (eg, food aid distribution), provided in a diverse range of settings to a variety of recipients. In theory, CTPs should be able to achieve positive nutrition outcomes through their ability to influence the determinants of nutrition status and CTPs are rapidly replacing traditional food security programmes, as a strategy to alleviate chronic poverty for households vulnerable to economic shocks and to improve both food security and nutrition resilience. Evidence suggests CTPs have a positive impact on household food consumption and asset holdings. However, child nutrition outcomes are not routinely achieved through social protection programmes,⁴ and there are gaps in knowledge of how they can be optimally implemented to consistently influence child nutrition status.

One of the key contributions of this review, in relation to other CTP impact evaluations and systematic reviews, is our focus on how the various CTP programme elements and implementation structures can be implemented synergistically to improve nutrition status, rather than evaluating the impact effect on nutrition through the cash transfer itself.

Our initial review of the literature indicates an existing and current evidence base related to CTP impact on both child nutrition indicators and proximal outcomes, such as household food consumption and maternal childcare practices. However, evaluations that also consider the influence of implementation structures and processes have been limited. To our knowledge, this is the first realist review of CTPs' impact on child nutrition status. The use of this approach in conjunction with other methods for data analysis and synthesis will offer a deeper understanding of the mechanisms and contextual factors required to address the various determinants of child nutrition status throughout CTP implementation processes.

The realist review method has limitations, and findings may not be easily reproduced where disciplinary perspectives and judgement differs across research teams in terms of relevance and quality of literature identified. We have sought to address this through clear specification of criteria, use of validated approaches (such as the MMAT) and maintaining an audit trail throughout the review process to support structured and reproducible decision making. The strength of the realist review method is its ability to be flexible and adaptable, which suits the complexity of CTPs with nutrition objectives.

The research will inform the development of strategies to be included in CTP project design and implementation guidelines to help optimise nutrition impact in contexts where CTPs are implemented with short-term or long-term objectives.

Ethics and dissemination

This stage of the study will not involve primary research; however, ethical clearance has been sought through the University of Queensland for the next steps of the research project. Findings will be presented in accordance with RAMESES guidelines and published in a peer-reviewed journal.

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