



ORIGINAL ARTICLE

## Is Money Important? The Effects of Conditional and Unconditional Cash Transfer Programmes on Maternal Health Outcomes in Africa and Latin America

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### Keywords

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Expectant mothers;  
Maternal health;  
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### ABSTRACT

**Background:** Poverty constitutes a barrier to poor women in accessing healthcare services in most developing countries. Policymakers and international development organisations have come up with the use of cash transfers to support vulnerable women, especially expectant mothers in their bid to access healthcare services. This review assessed the effects of cash transfer programmes on maternal health outcomes in Africa and Latin America.

**Methods:** We employed the use of systematic review to search for relevant literature from academic and grey literature databases such as PubMed, Science Direct and Google Scholar. The inclusion criteria of the search were met by eight studies which used different study designs to evaluate the effects of cash transfers on maternal health outcomes.

**Results:** Among the included studies, four showed positive effects of cash transfers on antenatal care while two showed no effects. In three countries, cash transfers were responsible for expectant mothers delivering in healthcare facilities while in two other countries, the cash receipts were unable to stimulate expectant mothers to deliver in healthcare facilities. All the three studies that assessed the effects of cash transfers on birth with a skilled attendant showed a positive effect while two studies showed a negative effect of cash transfers on postnatal care. In terms of heterogeneous impacts, cash transfers had a positive effect on the use of caesarean section, monitoring weight gain, blood pressure and baby's heartbeat.

**Conclusion:** Though evidence from this review is limited, there are visible effects of cash transfer programmes in improving maternal health outcomes.

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### INTRODUCTION

Studies have shown that poverty prevents expectant mothers in low-and-middle-income countries from accessing maternity

care services when needed.<sup>1-4</sup> The many avenues to poverty for women reflect the social, political, and cultural situations in which they live.<sup>4</sup> The principal cause is due

to gender division of labour, which defines men as wage earners and women as unpaid caregivers.<sup>4</sup> Women's position as child-bearers, and other domestic obligations bring a vicious circle which defines the financial hardship women face at home.<sup>4</sup> Women are considered to be the majority of the poor and are usually seen as the poorest among the poor.<sup>5, 6</sup> The situation of poor women calls for concerns during pregnancy. This is because they face a lot of issues due to their socioeconomic status. For instance, an approximately 22,000 women between the ages of 15-49 years are said to die yearly as a result of pregnancy or childbirth complications in Ethiopia.<sup>7</sup> Most of these women live in rural areas where physical obstacles pose a challenge to providing maternal healthcare services. In Malawi, the Maternal Mortality Ratio (MMR) was 807 per 100,000 live births, with 13 women dying daily. The neonatal mortality rate was 33 per 1,000 live births, with 52 new-born babies dying daily.<sup>8</sup> In Uganda, the MMR was said to be 435 deaths per 100,000 live births and these deaths were common to poor women than women from affluent households.<sup>7</sup>

Most often, women are commonly seen as child-bearers, and they find it challenging to access paid jobs compared to men, especially in developing countries. These situations make it difficult for them to escape poverty.<sup>6</sup> Since the degree of poverty is higher among women than men, the negative effects of poverty on health can be expected to have an even higher impact on women.<sup>4</sup> Studies that have examined the

interface between poverty and women's health discovered that women living in poverty were less likely to disclose that their health is in perfect conditions.<sup>4</sup> A number of studies have underscored the need to reduce poverty among women in order to enhance women's health.<sup>4</sup>

Social safety nets are increasingly becoming the prominent choice of government to solve the vulnerabilities of the poorest people living in poor countries.<sup>7</sup> They are being used to curtail the risk, alleviate the effects and expand the capability of poor families to cope and respond to health challenges.<sup>9</sup> Cash transfer programmes are part of such social safety net mechanism, usually targeted at vulnerable families.<sup>7</sup> Some of these social programmes have been designed in ways that they will have direct or indirect impact on maternal health outcomes.<sup>10,11</sup> Social safety nets include cash transfer programmes which are usually categorised as conditional and unconditional cash transfer programmes.<sup>12</sup>

Conditional Cash Transfers (CCTs) are a demand-side programme that has been used in reducing financial impediments to healthcare services, especially on women.<sup>10,11,13</sup> CCTs are social programmes that give regular cash payments to poor families, based on the use of health services and school attendance.<sup>10,11,13</sup> The main aims of CCTs are to provide social protection in order to facilitate an increase in the consumption of health care services by the very poor and to enhance human capital investment of poor families.<sup>13</sup> Cash receipts

are often given to women subject to the conditions stipulated by the programme.<sup>13</sup> Unconditional Cash Transfers (UCTs), on the other hand, are given to poor families primarily because they are poor and no conditions are attached to receiving the transfer payments.<sup>14</sup> In some cases, beneficiaries may be advised on the use of the cash receipts, though such beneficiaries are not compelled to accept such advice .

Empirical evidence has shown that cash transfers can enhance women's health outcomes. For instance, a systematic review that examined the effects of cash transfers and voucher on maternal healthcare in low-and-middle-income countries discovered that the social programmes significantly improved the uptake of antenatal care.<sup>15</sup> Another systematic review of Randomised Controlled Trials (RCT) on cash transfers and maternal health revealed that cash intervention had a positive impact on maternal health in sub-Saharan Africa.<sup>16</sup> A similar systematic review in seven Latin America countries and Nepal that examined the impact of CCTs on maternal and newborn health revealed that the programmes increased antenatal visits, professional attendance at birth, delivery at a healthcare centre, and tetanus toxoid vaccination for mothers.<sup>13</sup> Additional findings of the study indicated that the programmes did not have a substantial impact on fertility.<sup>13</sup>

The impact of cash transfer programmes on maternal health outcomes has not been well-documented in a systematic review

approach.<sup>13</sup> It is against this background that this present systematic review is conceived. The aim of the review is to evaluate the effects of cash transfer programmes on maternal health outcomes in some developing countries in Africa and Latin America where cash transfers have been used to support vulnerable women.

## **METHODOLOGY**

A systematic review was used to assess the impact of cash transfers on maternal health outcomes in Africa and Latin America. Systematic reviews use systematic mechanisms to gather relevant secondary data and use a methodological assessment tool to assess the quality of included studies. This review follows the criteria for conducting a systematic review to evaluate the impact of cash transfers on maternal health outcomes.

Criteria for considering studies for this review

**Type of studies:** This review included studies that examined the effects of cash transfers on maternal health outcomes and the review considered studies with the following designs: randomized control trials, quasi-experimental, time series analyses and pre-post studies. Furthermore, analytical observational studies such as prospective and retrospective cohort studies, case-control studies and analytical cross-sectional studies were taken into consideration.

**Types of participants:** The target population for this systematic review was

households which received cash transfers. The review also considered studies that included children and women beneficiaries of cash receipts. The systematic review also included caregivers caring for beneficiaries of cash transfers. Studies that did not meet the inclusion criteria of the review were excluded. The reasons for excluding some studies include outdated studies, limited data and key outcomes limitation.

**Types of interventions:** This review included studies that assessed interventions that have the following requirements: cash transfers that support poor households with low income; income disbursed to beneficiaries based on the condition that the beneficiaries participate in preventive healthcare services, and health and nutrition education sessions planned to improve positive behavioural changes.

**Types of outcomes:** This review also considered studies that included the following outcomes because of cash transfer interventions: maternal health, births in a healthcare facility, birth with a skilled birth attendant, postnatal care, obstetric complications and antenatal care. Others are caesarean section, weight gain, monitoring blood pressure, measuring the abdominal circumference, tetanus vaccine injection, measuring the baby's heartbeat and iron supplement.

**Search methods for identification of studies:** This review searched the following databases - academic and grey literature

databases as well as the websites of some international organisations.

**Academic and grey literature databases:** The databases searched included PubMed, Science Direct, Scopus, African Journals Online and Research Gate. Others were Google Scholar, Cochrane Library and ProQuest Dissertation and Theses Database.

**International organisations' websites:** This review searched the following organisations' websites: United States Agency for International Development (USAID), United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO) and United Nations Children's Fund (UNICEF). Others were HelpAge International, World Health Organization (WHO) and United Kingdom Department for International Development (DFID).

### **Data collection and analysis**

**Selection of studies:** This review conducted searches for potential literature electronically. These searches were limited to only articles written in English Language that assessed the impact of cash transfers on maternal health outcomes in Africa and Latin America. Key search terms such as "cash transfers", "conditional cash transfers" and "unconditional cash transfers" were used to identify potential literature. Other search terms used in the systematic searches included "maternal healthcare", "Africa", "Sub-Saharan Africa" and "Latin America". This review also searched for useful literature from the

reference lists of some studies we initially included in the systematic review. Studies we included in the review were published between 2008 and 2017.

This review included studies that met the inclusion criteria after the screening of titles, abstracts and text. For articles to be included in the systematic review, they must report one or more impacts of cash transfers on maternal health. Articles that reported on the impact of cash transfers on women's health not related to maternal health were excluded. We also excluded articles that are not scientific research-oriented such as online blog, report and newspaper articles discussing the effects of cash transfers on maternal healthcare.

**Data extraction:** Two authors were responsible for extracting data from studies that were included in the systematic review. They extracted the data independently and recorded the information in a standardised data form. This was after all differences that emanated from the data extraction process have been resolved amicably. The following were the data gathered by the two authors: citations, study location, methodology, study design, types of cash transfers and main outcomes measured.

**Quality assessment:** This review employed the use of Mixed Methods Appraisal Tool (MMAT) to assess the quality of the included studies.<sup>17</sup> The assessment tool allows for the assessment of five categories of studies. These include qualitative research, randomised controlled trials, non-randomised studies, quantitative

descriptive studies, and mixed methods studies.<sup>17</sup>

All the authors were involved in the methodological quality assessment of the included studies. Different assessment questions on study research questions, data collection process, study designs, study outcomes, target population, and statistical analysis were used for the assessment criteria. The discrepancies that arose on the assessment of the included studies among the authors were settled with a compromise which made the included studies to be of strong and moderate quality.

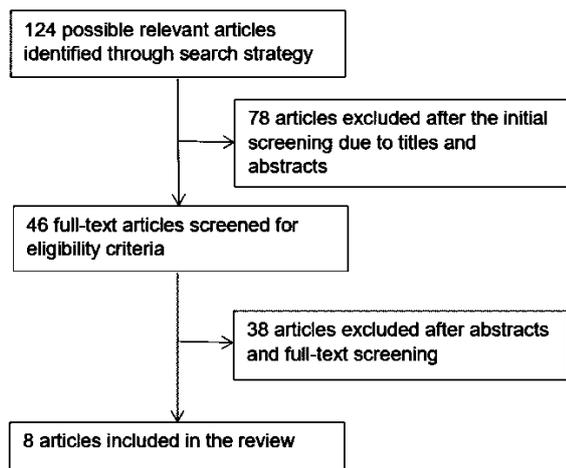
**Data synthesis:** This review employed the use of narrative synthesis for the systematic review. We organised our major findings into thematic areas after using coding to identify themes from each included study. The findings were pooled together and presented in text and table. We did not use meta-analysis for the analysis and presentation of our results because of the diversity of study designs and outcomes measured.

## RESULTS

### Study flow

Figure 1 shows the study chart flow of the studies included in the systematic review. The first online search for relevant literature on the subject area produced 124 articles. The rigorous screening of the titles and abstracts of these 124 articles led to the rejection of 78 articles. An additional screening of the remaining 46 articles showed that 38 of the articles did not adequately meet the inclusion criteria of the

systematic review; they were, therefore, excluded. Only 8 articles met the inclusion criteria, and they were included in the systematic review.



**Figure 1:** Flow chart diagram showing study selection process for systematic review of studies on cash transfers effects on maternal health outcomes in Africa and Latin America

### Characteristics of included studies

Table 1 presents the characteristics of the included studies. These studies were conducted in Africa.<sup>18-21</sup> and Latin America.<sup>10, 22-24</sup> All included studies used quantitative methods. In terms of study design, four studies used randomised controlled trial,<sup>10, 19, 20, 22</sup> two used difference in differences design (DID),<sup>20, 24</sup> and one each used regression discontinuity,<sup>23</sup> chi-square analysis of variance, and generalised estimating equation analyses,<sup>18</sup> and interrupted time series.<sup>21</sup> Among the included studies, seven evaluated the impact of conditional cash transfers on maternal health outcomes,<sup>4, 10, 18, 21-24</sup> while one assessed unconditional cash transfers and maternal health interface.<sup>20</sup> Table 2 shows more details of the conditional and unconditional cash transfer programmes from each country. All

the included studies measured various maternal health outcomes.

## The effects of cash transfers on maternal health

### Antenatal care

Of the eight included studies, six examined the relationship between cash transfers and uptake in antenatal care.<sup>10, 18, 20, 21, 23, 24</sup> In El Salvador, a regression discontinuity design that was used to evaluate the *Comunidades Solidarias Rurales* cash transfers programme on maternal health showed that the programme did not have positive changes on antenatal care for pregnant women receiving cash transfers, whereas expectant mothers not receiving cash transfers improved in their antenatal care.<sup>23</sup> However, the study revealed that expectant mothers did at least sign for a prenatal check-up, and of the expectant mothers who did not attend the minimum five visits to be deemed satisfactory, virtually all attended four.<sup>23</sup> In Mexico, cash transfers have a positive impact on antenatal care, the findings from the impact evaluation of the Mexico *Oportunidades* cash transfer programme indicated that beneficiaries of the programmes received additional prenatal procedures.<sup>10</sup>

Conditional cash transfer programme in Nigeria increased women's visits for antenatal care.<sup>21</sup> The interrupted time series analysis (January 2012 to March 2014) used to assess the impact of the cash transfer programme on maternal health outcomes showed that initially, when the

**Table 1: Characteristics of included studies**

Study	Location	Qualitative/ Quantitative	Study design	Intervention	Main outcome measured
Barber, 2009 <sup>22</sup>	Mexico	Quantitative	RCT	CCT	Caesarean section
Barber and Gertler, 2008 <sup>10</sup>	Mexico	Quantitative	RCT	CCT	Prenatal care
Cohen et al. 2017 <sup>19</sup>	Kenya	Quantitative	RCT	CCT	Maternity care
De Brauw, 2011 <sup>23</sup>	El Salvador	Quantitative	Regression discontinuity design	CCT	Prenatal care, skilled attendance at birth, birth in a health facility and postnatal care
Díaz and Saldarriaga, 2017 <sup>24</sup>	Peru	Quantitative	Difference-in-differences (DID)	CCT	Utilization of prenatal health care
Handa et al. 2016 <sup>20</sup>	Zambia	Quantitative	Randomized design and difference-in-differences multivariate regression	UCT	Maternal health
Kahn et al. 2015 <sup>18</sup>	Uganda	Quantitative	Chi-square, analysis of variance, and generalized estimating equation analyses	CCT	Antenatal Care Utilization
Okoli et al. 2014 <sup>21</sup>	Nigeria	Quantitative	Interrupted time series	CCT	Maternal health

programme began, the attendance rate for antenatal care decreased; however, when the expectant mothers started receiving cash receipts, attendance increased.<sup>21</sup> In Peru, the outcomes of the study were similar to those of Nigeria. Results from the Peru study showed that expectant mothers who were exposed to the cash transfer programme were likely to attend more check-ups.<sup>24</sup> The results were positive but small because there are large numbers of expectant mothers that attend antenatal care on a regular basis.<sup>24</sup>

In Uganda, there was a positive impact of cash transfer programme on antenatal care after chi-square, analysis of variance, and generalised estimating equation analysis were used to assess the impact of the cash transfers on maternal health outcomes.<sup>18</sup> In

Zambia, the results showed negative effects, as the randomised design and difference-in-differences multivariate regression used on data collected over a two-year period (2010 to 2012) on the impact of Zambia's Child Grant Programme on maternal health revealed that the programme did not have any positive impact on antenatal care.<sup>20</sup> Table 3 presents the effects of cash transfers programmes on antenatal care.

### **Births in a healthcare facility**

Five included studies assessed the effects of cash transfers on births in healthcare facilities (Table 4).<sup>18, 19, 22-24</sup> In El Salvador, the study found a significant impact of cash transfers on expectant mothers giving birth in health facilities with professional care.<sup>23</sup> A study in Kenya that used an RCT found

**Table 2: Detailed information about CCT and UCT programmes in each country**

Study	Country	Programme	Type	Benefits (monthly benefit in US\$)	Conditions/requirements
Barber, 2009 <sup>22</sup>	Mexico	Oportunidades	CCT	US\$15/household/month	The monthly cash receipt was conditional on each household attending regular clinic consultations and attending health enlightenment campaigns. Also, women were conditioned to receive nutritional supplements.
Barber and Gertler, 2008 <sup>10</sup>	Mexico	Oportunidades	CCT	US\$15/household/month	The monthly cash receipt was conditional on each household attending regular clinic consultations and attending health enlightenment campaigns. Also, women were conditioned to receive nutritional supplements.
Cohen et al. 2017 <sup>19</sup>	Kenya	Labeled cash transfer (LCT) L-CCT	CCT, UCT	US\$10	<i>LCT</i> : No conditions were attached to the cash receipt. <i>L-CCT</i> : Additional cash was given to expectant mothers if they delivered in a facility to which they had committed during pregnancy.
De Brauw, 2011 <sup>23</sup>	El Salvador	Comunidades Solidarias Rurales	CCT	US\$15 health benefit. \$20 per month for households eligible for both the health and education benefits.	Conditioned on prenatal monitoring for expectant mothers.
Diaz and Saldarriaga, 2017 <sup>24</sup>	Peru	JUNTOS	CCT	USD \$70 bimonthly	Expectant mothers must visit healthcare centres for antenatal care and nursing mothers must visit healthcare centres for postnatal care.
Handa et al. 2016 <sup>20</sup>	Zambia	Child Grant Programme	UCT	US\$12 on a bi-monthly	No conditions were attached to the programme
Kahn et al. 2015 <sup>18</sup>	Uganda	Modest cash transfers	CCT	US\$0.20 for each of four health visits. US\$0.40 for single first-trimester visit. US\$0.40 for each of four health visits.	Conditioned on health visits.
Okoli et al. 2014 <sup>21</sup>	Nigeria	SURE-P MCH	CCT	Around US\$30	Conditioned on attending key health services.

that cash transfers increased the possibility that expectant mothers would deliver in health facilities they wanted and facilities that met standards for routine and emergency new-born care.<sup>19</sup> The study revealed that the cash transfers programme induced expectant mothers to travel from the slum to have their babies in good health facilities in nearby cities.<sup>19</sup> Nevertheless, the study found that the cash transfer programme did not significantly motivate expectant mothers to increase their

tendency of using high-level facilities that met standards for assessing obstetric care.<sup>19</sup> In Mexico, the conditional cash transfer programmed *Oportunidades* increased the rate of caesarean delivery in health facilities compared to those of expectant mothers who were not beneficiaries of the cash transfer programme.<sup>22</sup>

**Table 3: Review of effects of cash transfer programmes on antenatal care**

Country	Study	Population	Evaluation method	Outcomes	Impacts/results
El Salvador	De Brauw, 2011 <sup>23</sup>	Expectant mothers	Regression discontinuity design	Prenatal care	The impact of the programme on adequate prenatal care was negative, but not statistically different than zero.
Mexico	Barber and Gertler, 2008 <sup>10</sup>	892 women in poor rural communities in seven Mexican states.	RCT	Prenatal procedures	The programme allowed cash transfer beneficiaries to have 12.2% more prenatal procedures than non-recipients of the cash transfers (adjusted mean 78.9, 95% Confidence Interval (CI): 77.5–80.3; P < 0.001).
Nigeria	Okoli et al. 2014 <sup>21</sup>	20,133 women	Interrupted time series	Antenatal care	Total attendance of antenatal visits dropped by 45.53 consultations per 100,000 catchment population (95% CI: -82.71 to -8.37), significant at the 5% level when the programme began, but attendance increased to 15.11 visits per 100,000 catchment population per month (95% CI: 7.38 to 22.85), significant at the 0.1% level.
Peru	Díaz and Saldarriaga, 2017 <sup>24</sup>	15,308 women	Difference-in-differences (DID)	Prenatal care	Eligible expectant mothers were exposed to the programme are 2.9 percentage points more likely to attend prenatal check-up, attend 0.31 more check-ups during pregnancy compared to expectant mothers not exposed to the programme. The programme increased the possibility of attending at least 4 prenatal check-ups by 4.3% and increased the possibility of having a prenatal check-up during initial trimester of pregnancy by 11.5%.
Uganda	Kahn et al. 2015 <sup>18</sup>	676 women	Chi-square, analysis of variance, and generalised estimating equation analyses	Antenatal care utilization	Expectant mothers who were recipients of the cash transfers had higher odds of three or more antenatal visits than their counterparts not receiving cash transfers.
Zambia	Handa et al. 2016 <sup>20</sup>	Expectant mothers	Randomised design and difference-in-differences multivariate regression	Antenatal care	No evidence of significant heterogeneous impacts across all antenatal health outcomes.

In Peru, the study that examined the effects of *JUNTOS* cash transfer programme on healthcare at birth suggested that the cash transfer programme did not have any effect on the possibility of institutional delivery *vis a vis* births attended to by professional health personnel in a health facility.<sup>24</sup> In Uganda, a chi-square, analysis of variance, and generalised estimating equation analysis on the effects of cash transfer programme on maternal healthcare revealed that the odds of delivering in a health facility showed no difference between expectant mothers receiving cash transfers and those that were not receiving.<sup>18</sup> Nevertheless, expectant mothers “with more antenatal visits had higher odds of delivering in a health facility”.<sup>18</sup>

#### **Birth with a skilled birth attendant**

Of the eight included studies we reviewed, three examined the effects of cash transfer programmes on birth with a skilled birth attendant (Table 5).<sup>20, 23, 24</sup> A study in El Salvador that used regression discontinuity design to examine the effects of cash transfers on maternal health found a positive impact of the cash transfer programme on skilled attendance at birth.<sup>23</sup> The findings of the study showed that the positive impact that arose from the cash transfers and birth with a skilled birth attendant was due to a shift in attendance at birth by midwives to attendance by obstetrician/gynaecologist and other medical physicians.<sup>23</sup> In Peru, the cash transfer programme increased the possibility that expectant mothers will

receive skilled medical attention during prenatal visits.<sup>24</sup> However, the study did not find any statistically significant effect on the possibility that an expectant mother was attended to by a medical doctor, an obstetrician or a midwife during a prenatal visit.<sup>24</sup> Additionally, the cash transfer programme increased the possibility that an expectant mother was checked into a health facility during gestation.<sup>24</sup> In Zambia, the Child Grant Programme improved skilled attendance at birth. Expectant mothers who have access to quality healthcare services in their domain were more likely to give birth in the presence of a medical doctor or nurse.<sup>20</sup>

#### **Postnatal care**

Two studies examined the effects of cash transfers on the uptake on postnatal care for women (Table 6).<sup>23, 24</sup> In El Salvador, the cash transfer programme did not have a positive impact on postnatal care.<sup>23</sup> In Peru, it was discovered that women receiving cash transfers were not more likely to get breastfeeding training supervised by a health professional during pregnancy. Also there was no effect in the possibility that a woman breastfed her newborn baby within an hour after delivery.<sup>24</sup> The findings also suggested that expectant mothers were more likely to take their new-born babies for a postnatal check-up, with a high possibility of the postnatal visit happening within one week after childbirth.<sup>24</sup>

#### **Heterogeneous impacts**

Most of the included studies revealed that cash transfers have heterogeneous

**Table 4: Review of effects of cash transfer programmes on births in a healthcare facility**

Country	Study	Population	Evaluation method	Outcomes	Impacts/results
El Salvador	De Brauw, 2011 <sup>23</sup>	Expectant mothers	Regression discontinuity design	Births in a healthcare facility	The programme had a significant impact on birth in a healthcare facility from 15.3 to 22.8 percentage points.
Kenya	Cohen et al. 2017 <sup>19</sup>	553 women	RCT	Facility that met standards for routine new-born care	Beneficiaries of the two cash transfer programmes significantly delivered in facilities that met standards for new-born care, 62.7% and 58.2% respectively. While 48.2% non-beneficiaries delivered in the same facility.
Mexico	Barber, 2009 <sup>22</sup>	979 women in poor rural communities	RCT	Caesarean section	The cash transfer programme was associated with a significantly higher caesarean delivery rates in social security facilities (24.0% in contrast with 5.6 among non-beneficiaries) and in public facilities (19.3 in contrast to 9.5% of non-beneficiaries).
Peru	Díaz and Saldarriaga, 2017 <sup>24</sup>	15,308 women	Difference-in-differences (DID)	Health care at birth	Results suggested no effects in the probability of institutional delivery.
Uganda	Kahn et al. 2015 <sup>18</sup>	676 women	Chi-square, analysis of variance, and generalised estimating equation analyses	Birth in a facility	The probability of delivery in a health facility was not different from the beneficiaries and non-beneficiaries of the cash transfers. However, “with more antenatal visits had higher odds of delivering in a health facility (OR 1.21, 95% CI: 1.03-1.42).”

**Table 5: Review of effects of cash transfer programmes on birth with a skilled birth attendant**

Country	Study	Population	Evaluation method	Outcomes	Impacts/results
El Salvador	De Brauw, 2011 <sup>23</sup>	Expectant mothers	Regression discontinuity design	Skilled attendance at birth	Cash transfers increased skilled attendance at birth “with the point estimates of impacts that range from 12.3 to 17.4 percentage points.”
Peru	Díaz and Saldarriaga, 2017 <sup>24</sup>	15,308 women	Difference-in-differences (DID)	Skilled medical attention	The cash transfer programme increased the probability of getting skilled medical assistance during prenatal consultations by 2.4 percentage points (3%).
Zambia	Handa et al. 2016 <sup>18</sup>	Expectant mothers	Randomised design and difference-in-differences multivariate regression	Skilled attendance at birth	For skilled attendance at birth, expectant mothers who have access to quality healthcare services were more likely to give birth with a gynaecologist or midwife (both significant at the 1% level). When interaction terms are included, the programme impact “coefficient for both receipt of any skilled antenatal care (coeff: 0.383, t-stat: 2.40) and quality of antenatal care (coeff: 0.238, t-stat: 1.87).”

**Table 6: Review of effects of cash transfer programmes on postnatal care**

Country	Study	Population	Evaluation method	Outcomes	Impacts/results
El Salvador	De Brauw, 2011 <sup>23</sup>	Expectant mothers	Regression discontinuity design	Postnatal care	The cash transfer programme had a negative impact on postnatal care that are not significantly different from zero.
Peru	Diaz and Saldarriaga, 2017 <sup>24</sup>	15,308 women	Difference-in-differences (DID)	Postnatal care	The programme had no effects on breastfeeding training and the probability a woman will breastfeed her baby within one hour of birth, nevertheless, women receiving cash transfers were 7% more likely to take their babies to a postnatal check-up.

impacts or outcomes. A study in Mexico suggested that cash transfers to expectant mothers in rural areas increased caesarean section among them.<sup>22</sup> In Peru, a study that used a quantitative method and difference-in-difference study design found that cash transfer programme had positive effects on the possibility of monitoring weight gain, the possibility of measuring the belly circumference, the possibility of monitoring blood pressure and the possibility of monitoring baby's heartbeat.<sup>24</sup> The study also found that expectant mothers who were exposed to the programme during pregnancy were more likely to get iron supplements and tetanus vaccine injections during a prenatal consultation, in contrast to expectant mothers who were not exposed to the programme<sup>24</sup> In addition, the study found that expectant mothers that were exposed to the cash transfer programme have the possibility of less obstetric complications during labour.<sup>24</sup> In Zambia,

the Child Grant Programme had a significant impact on the quality of antenatal care on younger mothers or caregivers in contrast to older mothers or caregivers.<sup>20</sup> Table 7 presents the effects of cash transfers programmes on heterogeneous impacts.

## DISCUSSION

Using a systematic review methodology and a narrative synthesis, we evaluated the impact of both conditional and unconditional cash transfer programmes on maternal healthcare outcomes in Africa and Latin America. The findings of this review have shown that money is very important when it comes to expectant mothers receiving antenatal care, having babies in healthcare facilities and having births with a skilled attendant. For clarification purpose, a positive impact or a positive effect in this review means the positive influence an intervention has on a beneficiary.

**Table 7: Review of effects of cash transfer programmes on maternal healthcare heterogeneous impacts**

Country	Study	Population	Evaluation method	Outcomes	Impacts/results
Mexico	Barber, 2009 <sup>22</sup>	979 women in poor rural communities	RCT	Caesarean section	Expectant mothers receiving cash transfers were associated with a 5.1 percentage points increase in caesarean rates. The impact rose to 7.5 percentage points for expectant mothers receiving cash transfers for 6 months before delivery
Peru	Diaz and Saldarriaga, 2017 <sup>24</sup>	15,308 women	Difference-in-differences (DID)	Obstetric complications at birth	For expectant mothers receiving cash transfers, the probability of having obstetric complication during labour reduced by nearly 16%
Zambia	Handa et al. 2016 <sup>20</sup>	Expectant mothers	Randomized design and difference-in-differences multivariate regression	Quality of antenatal care	The quality of antenatal care favoured young mothers and caregivers than older mothers and caregivers as the interaction terms are significant only at the p<0.10 level

For example, cash transfers helping women to access maternity care. On the other hand, a negative impact means an intervention not producing any positive result on a beneficiary. For instance, cash transfers to vulnerable women did not improve the women access to health facilities even though the cash was conditioned on healthcare visits.

Conditional cash transfer programmes seem very effective in improving various maternal health outcomes. Among the study we reviewed, six that evaluated the effects of conditional cash transfer programmes

showed that cash transfers have positive effects on antenatal care.<sup>10, 18, 21, 24</sup> Among the studies, none were able to state the degree of impact of cash transfer on antenatal care. A systematic study by Hunter et al.<sup>15</sup> showed that expectant mothers exposed to cash transfers in Guatemala, Honduras, Indonesia and Uruguay improved in their uptake in antenatal care. Nevertheless, two studies in our review found negative effects of cash transfers on the uptake in antenatal care in El Salvador and Zambia.<sup>20, 23</sup> In the case of Zambia, it was reported that the negative effects could have been as a result of the

programme's objective which did not focus on maternal healthcare.<sup>20</sup> Also, it can be established that because the programme in Zambia was unconditional cash transfers, beneficiaries might have used their cash for other purposes other than maternal healthcare.

In El Salvador,<sup>23</sup> Kenya<sup>19</sup> and Mexico,<sup>22</sup> conditional cash transfer programmes showed positive effects on "birth in a healthcare facility." In rural areas of most developing countries, there are lack of qualified midwives and doctors.<sup>25</sup> Cash transfers often motivate expectant mothers to use healthcare facility to deliver their babies since they have to pay for medical services. A case in point is the study in Kenya that showed women from the slum travelled to where there are healthcare facilities to deliver their babies.<sup>19</sup> The significant level of impact of cash transfers on birth in healthcare facilities was only reported in the study in El Salvador.<sup>23</sup> Despite the impact of cash transfers on birth in health facilities, two studies, one in Peru,<sup>24</sup> and the other in Uganda,<sup>18</sup> showed no positive impact between cash transfers and birth in health facilities.

Though only three studies reported the effect of cash transfers on birth with a skilled birth attendant,<sup>20, 23, 24</sup> the outcomes of the studies showed the improvement in the use of professional birth attendant during childbirth among the women exposed to cash transfers. Studies have shown that women suffered severe complications during pregnancy or

childbirth and some even die as a result of pregnancy and childbirth complications.<sup>7, 8</sup> Using health facilities where there are skilled birth attendants at delivery is vital in avoiding maternal mortality and morbidity.<sup>25</sup> The findings of this review have shown that cash transfers have played a significant role in allowing poor women to have access to skilled birth attendants in El Salvador,<sup>23</sup> Peru,<sup>24</sup> and Zambia.<sup>20</sup>

Another important dimension of cash transfer is the heterogeneous impacts reported by some included studies. Aside from the negative effect of cash transfers on postnatal care in El Salvador,<sup>23</sup> and the mixed effects in Peru,<sup>24</sup> Cash transfers showed positive impacts in quality care for expectant mothers, reduced pregnancy and childbirth complications, leading to preventive care and had a positive effect on younger mothers.

This review has shown, to some extent, the positive effects of cash transfer programmes on maternal health outcomes. However, there are some limitations to the review which suggest that the findings of this review should be treated with caution. First, this review only used articles written in English Language whereas there are other studies that have evaluated cash transfers and maternal health outcomes in other languages. Second, only eight studies met the inclusion criteria of this review which made it difficult to draw a final conclusion to what extent cash transfers can improve maternal healthcare. While this review included studies from countries in Africa

and Latin America, we excluded those from countries from Asia. A systematic review study of Africa, Asia and Latin America would have shown various levels of effects of cash transfers on maternal health outcomes in the three continents. More rigorous studies are needed to assess the effect of cash transfer programmes on maternal health outcome in Africa, Asia and Latin America. The outcomes of these studies will be useful to know the levels of impact on the three continents.

### Conclusion

This review has shown that money is important in maternal health outcomes in Africa and Latin America. This is because cash transfer programmes that give cash to expectant mothers improve their maternal health outcomes. Though evidence from this review is limited, there are visible effects of cash transfers programme improving antenatal care, birth in a health facility and birth with a skilled birth attendant. Cash transfer is a vital component of social protection helping poor women to improve their maternal health outcomes. Policymakers in Africa and Latin America need to do more to assist poor women to increase their access to healthcare services.

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