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Nigeria Child Development Grant Programme Evaluation

Quantitative Midline Report Volume I: Midline findings

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Preface

This report presents the findings from the midline survey of the quantitative impact evaluation of the Child Development Grant Programme (CDGP) in northern Nigeria. The household survey data collection was conducted from October to December 2016 and a final round of data collection is scheduled for 2018. This report was produced by Pedro Carneiro, Giacomo Mason and Imran Rasul from Institute of Fiscal Studies (IFS) and Lucie Moore and Molly Scott from Oxford Policy Management (OPM).

Disclaimer

This material has been funded by UK aid from the UK government; however, the views expressed do not necessarily reflect the UK government's official policies.

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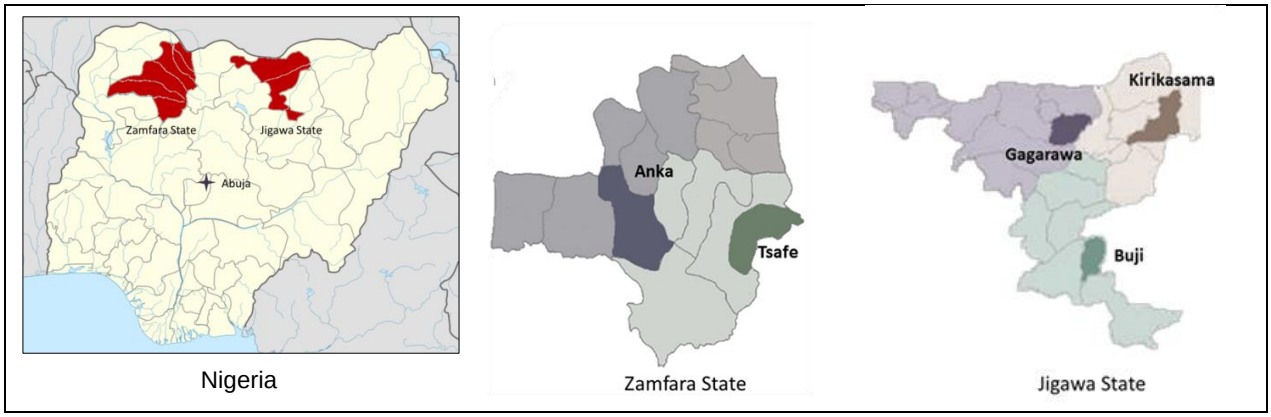
This report benefited from external peer review inputs by the CDGP evaluation review group that includes DFID staff, programme staff and independent evaluation experts. The report was also reviewed by DFID's external Evaluation Quality Assurance and Learning Services (EQUALS).

Executive summary

Overview of the Child Development Grant Programme

The Child Development Grant Programme (CDGP) is a six-year, DFID-funded pilot programme (2013–2019) that is being implemented in Zamfara and Jigawa states in northern Nigeria. The programme aims to test an approach to reducing the widespread poverty, hunger and malnutrition in these states, that affects the potential for children to survive and develop. The programme involves two components whose impact is being jointly tested: an unconditional cash transfer provided to pregnant women and women with children under two years (aimed at tackling the economic causes of inadequate dietary intake); and a counselling and behaviour change campaign (BCC) (aimed at influencing maternal and childcare practices). The programme is implemented by Save the Children and Action Against Hunger in five local government areas (LGAs) across the two states: Anka and Tsafe in Zamfara State, and Buji, Gagarawa and Kiri Kasama in Jigawa State (see Figure 1).

Figure 1: Location of the CDGP states and LGAs



Source: edited from maps retrieved from Wikimedia Commons and the Nigerian Chamber of Commerce website

The unconditional cash transfer component of the programme involves the provision of a monthly cash transfer to up to 90,000 pregnant women and women with children under the age of two years (selected during pregnancy) for a period of approximately 33 months, targeting the first 1,000 days of a child's life. The amount of the cash transfer was initially Nigerian Naira (NGN) 3,500 per month, and was increased to NGN 4,000 from January 2017. This predictable cash transfer is expected to contribute to increased food security and improved intake of more nutritious food, leading to improvement in child nutrition.

The counselling and BCC component of the programme provides communities with education and advice about nutrition and health. This BCC is intended to influence key areas of knowledge and practice, including breastfeeding and infant diets, and addresses both the women who are the direct beneficiaries of the cash transfer as well as men and influential members of the community. Two different designs of the BCC component are being tested:

1. 'low-intensity' BCC, delivered through posters, radio messaging, text messaging, health talks and food demonstrations; and
2. 'high-intensity' BCC, delivered through support groups and one-to-one counselling for women receiving the transfer, which is in addition to all components of the 'low-intensity' BCC.

Background to the evaluation and overall design

The focus of the evaluation is to provide an understanding of the *impact* of the programme's components on the households and communities it supports. It does this by using a mix of different methods and interlinked workstreams to gather evidence about the programme's impact: an initial situation analysis, to provide contextual understanding for the programme; a quantitative impact evaluation and a qualitative impact evaluation, to understand the impact of the CDGP on key outcomes; and a process evaluation, to assess the effectiveness of the programme's implementation.

The evaluation tests a series of key hypotheses underpinning the programme's theory of change (ToC). The key ToC hypotheses are outlined in Box 1 below.

Box 1: Key evaluation hypotheses

Addressed primarily by the quantitative impact evaluation:

Evaluation Hypothesis I: The CDGP intervention, and in particular the provision of a regular transfer of NGN 3,500 on a monthly basis to women, will result in the consumption of larger quantities, and more varied types, of food, which in turn will result in an increase in dietary intake and consequently a reduction in child malnutrition.

Evaluation Hypothesis II: The provision of a regular predictable cash transfer will result in a reduction in negative risk-coping behaviour and, in particular, a reduction in the distress sale of assets and debt accumulation among beneficiary households.

Evaluation Hypothesis III: The nutritional advice and counselling provided by the programme will improve the knowledge, attitudes and practices of the targeted men and women in relation to nutrition and general maternal and childcare practices.

Addressed primarily by the qualitative impact evaluation:

Evaluation Hypothesis IV: The cash transfer will result in improved material wellbeing and will contribute to the relational wellbeing of households through enhanced trust and reciprocal social and economic collaborations.

Evaluation Hypothesis V: The provision of a regular cash transfer to women will enhance their ability to make economic choices and will result in improved social capital.

Addressed primarily by the process evaluation:

Hypothesis VI: Poor implementation of the programme (i.e. poor targeting, irregular payments, inadequate information dissemination, and an inappropriate BCC campaign) will reduce the potential impacts of the programme.

Source: Adapted from e-Pact (2014) *CDGP Evaluation Inception Report*, p. iv

Objectives of this report

This report presents the findings from the midline survey carried out as part of the quantitative impact evaluation of the CDGP in northern Nigeria, which is one part of the overall evaluation. The findings reported here come from information collected via the household and community survey between October and December 2016. The objective of the report is to present results regarding the impact of the CDGP, two years on from the baseline. It provides information on how the CDGP was rolled out in practice; on how it has affected how households earn a living and obtain food; on how it has affected their knowledge of health practices regarding when a woman is pregnant or taking care of infants; on how it has affected their views regarding fertility, marriage and the use of health facilities; and, finally, on how it has affected the physical and mental development of their children. We summarise whether the findings from the midline survey confirm or disconfirm the evaluation hypotheses.

The endline evaluation results will be presented in May 2019.

Quantitative evaluation design and methodology

The quantitative impact evaluation is a cluster randomised controlled trial, in which communities have been randomly selected either to receive the CDGP interventions (treatment groups) or not to receive those interventions (control group). The impact of the interventions are found by comparing households in the communities where the programme interventions are applied with households in communities where they are not. Randomisation is considered the most rigorous way to measure the impact of the CDGP on beneficiary households because it should ensure that treatment and control groups have similar characteristics at the start of the evaluation. Thus, any differences observed at the end of the programme can be attributed to the programme's interventions.

The unit of randomisation is the community (i.e. village). This means that we randomly chose which communities would be in the treatment groups and which in the control group. The non-CDGP (i.e. control) communities are located in the same LGAs as the CDGP (i.e. treatment) communities and thus are likely to be exposed to similar external factors (such as inflation, access to markets, availability of foodstuffs, availability of seasonal work, etc.). This means that when we compare average outcomes for households in CDGP communities with average outcomes for households in non-CDGP communities we can be confident that any differences observed are due to the CDGP interventions.

This evaluation has two treatment groups and one control group. The first treatment group (Treatment 1) is offered the cash transfer and 'low-intensity' BCC. The second treatment group (Treatment 2) is offered the cash transfer and 'high-intensity' BCC. The control group receives no intervention for the duration of the evaluation, but may receive the intervention after the second household survey is completed in 2018, depending on availability of funding. The reason for having two separate treatment groups and one control group is to be able to measure the impact of the unconditional cash transfer and 'low-intensity' BCC, as well as the additional impact of providing 'high-intensity' BCC.

Baseline data were collected from households across both treatment and control groups from August to October 2014 and midline data were collected from the same households in October to

November 2016.[1] Data will be collected from the same households in the endline survey in 2018, after four years of programme implementation.

All estimates of the impact of the CDGP contained in this report are arrived at by comparing the outcomes of women who were pregnant at baseline residing in CDGP communities (and their households/husbands/children) with women who were pregnant at baseline residing in non-CDGP communities (and their households/husbands/children). Apart from women who were pregnant at baseline, the remainder of our sample is made up of women who were not pregnant at baseline. When estimating the impact of the CDGP throughout this report these women who were not pregnant at baseline are not included in the sample. However, we do focus on this sample of women who were not pregnant at baseline when seeking to understand if the CDGP has had an impact on fertility choices.

Limitations

There are a number of limitations with our methodology that need to be kept in mind when interpreting the results reported here:

1. **We are not able to estimate the additional impact of the high-intensity form of BCC**, due to the fact that implementation of the high- and low-intensity forms of BCC is found to have been very similar on the ground. However it is reasonable to argue that if the programme was scaled up it would look more like the low-intensity version.
2. **The impact estimates of the CDGP presented in this report are likely to represent an underestimation of the true impact of the CDGP.** This is due in part to challenges in the implementation of this programme, which resulted in imperfect coverage of women who were eligible to receive it. In our sample, only around 83% of women living in CDGP communities who reported to be pregnant at baseline actually received the grant. Since our estimation strategy is based on comparing women who were pregnant at baseline between those in CDGP communities and those in non-CDGP communities, regardless of whether or not they actually received the grant, this may result in underestimation of the programme's impact. A second source of possible underestimation is the possibility that some of the knowledge introduced by CDGP could have 'spilled over' to women in non-CDGP communities.
3. **The report evaluates an 'early' version of the programme.** The programme has made some significant improvements to its implementation since it first began, but our findings are not able to capture this.
4. **Our sample is not representative of the population in the CDGP areas.** This is because we only selected households where at least one woman was pregnant (or likely to become so) immediately prior to the start of the programme. These households are therefore not representative of all households in the sampled communities. Secondly, our sampling strategy (detailed in Sections 5 and 6 of Vol. II of this report) over-represents households residing in smaller villages. Given the lack of census data for these areas, we do not attempt to reconstruct weights to balance the analysis.
5. **There is a risk of self-reporting bias for some outcomes,** which survey respondents may have an incentive to overstate or otherwise misreport.

[1] There is the potential for seasonal differences between the baseline and midline. However, in our analysis we are comparing CDGP communities with non-CDGP communities at midline only and thus any seasonal differences will not affect our results. Data for both CDGP and non-CDGP communities were collected over the same period at midline.

6. **The time horizon for the evaluation is short, and may not be able to capture impacts on outcomes that take longer to change (such as children's nutritional status).**
7. **The sample size was significantly reduced compared to baseline due to attrition of 12% of the households surveyed at baseline.** This attribution was mostly caused by security issues that prevented the survey teams from visiting 18 of the evaluation communities. This might have reduced the statistical power of our analysis to detect effects.

Findings

Implementation of the CDGP

Knowledge of the CDGP is widespread in CDGP communities and participation among eligible households is high. Over 95% of women in our sample who were pregnant at baseline report knowledge of the programme in both kinds of CDGP community (i.e. those receiving low-intensity BCC and those receiving high-intensity BCC), with slightly higher knowledge of the programme in communities receiving high-intensity BCC.

Rates of participation in the programme are also high. Around 84% of women who were pregnant during the baseline in both low- and high-intensity CDGP communities ended up participating in the programme. Possible reasons why the remaining 16% of the women who were pregnant at baseline did not end up enrolling in CDGP include the possibility that women misreported their pregnancy to baseline field teams, miscarried or gave birth between the baseline survey and CDGP registration, that they did not want to participate or that they were unable to successfully register due to issues in the programme's implementation processes. **Participation rates are higher for Jigawa than Zamfara**: in Jigawa, 93% of the women who were pregnant at baseline ended up receiving cash transfers from CDGP, whereas in Zamfara the figure is only 76%.

We find that 7% of women in non-CDGP communities who were pregnant at baseline ended up receiving payments from the CDGP. This could be due to a number of factors, including the programme being rolled out in the wrong communities by mistake or women fraudulently accessing the programme.

In CDGP communities, there is a variation in the timing of the first payment made to pregnant women. While some women received their first payment early in their pregnancy, the majority did not begin to receive transfers until around the time of delivery, and some only received their first payment after delivery.

In the majority of households, **women report having control of how the cash transfer is spent**. This is the case across both Jigawa and Zamfara. In terms of what the CDGP transfer is reported as being spent on, both spouses report food (for the household in general, or for children in particular) as being the main use of the additional resources provided by the CDGP. In terms of the non-food items the CDGP payments are spent on, a good share of the additional resources appears to be used for other child-related expenditures (such as on health and clothing).

Turning to the BCC component of the programme, **we find that the most frequent BCC channel reported for information dissemination to women is posters, followed by food demonstrations.** For their husbands, the most frequent channels reported for information dissemination are the radio and posters. Women are far more likely to attend health talks or food demonstrations than their husbands.

We do not find large differences between the high- and low-intensity CDGP communities in reported access to BCC channels. Although for each channel we see that both men and women are slightly more likely to report the high-frequency channel if they reside in a high-intensity BCC community, these differences are not large. This demonstrates that there are not large on-the-ground differences in how the low- and high-intensity BCC versions of the CDGP operate in practice and therefore this evaluation cannot assess the relative effectiveness of the two approaches, as was originally intended. **As a result, most of our evaluation findings will pool the evidence from high- and low-intensity BCC CDGP communities.**

The BCC activities are reaching a larger proportion of people in Jigawa compared to Zamfara. This mirrors findings from the process evaluation, which details procurement and staffing issues in Zamfara that have reduced the implementation capability in respect of health talks and food demonstrations.

In terms of **recall of specific messages received from the BCC component** of the CDGP, women most frequently recall messages related to exclusive breastfeeding and eating nutritious foods. For men, there is a more uniform recall of various BCC messages for any given channel. **Many households in non-CDGP communities also report receiving such messages, although the likelihood of receiving a message through any given channel is always higher in CDGP communities**. This might indicate the presence of concurring information and advice programmes in non-CDGP communities. However, food demonstrations and health talks are only prevalent in the CDGP communities.

Impact of the CDGP on household income and livelihoods

We find an impact of around 6 percentage points in the proportion of women engaged in any work activities, due to the CDGP. This translates into an increase in *average* women's earnings of around 20% of the baseline level. For men, there is no impact on the likelihood of working, since almost all men engage in some form of work activity already. However, overall we do not find a significant impact on total household earnings.

The CDGP does not have a significant impact on the likelihood that either men or women cultivate land. There is also no effect on crop sales by men, and only a very small effect on crop sales by their wives (with only very few women cultivating land to begin with). **The CDGP has an impact on the likelihood that a woman owns any animals herself** (mainly chickens and goats). The magnitude of the impact is around 7% of the baseline level. However, there is no impact on whether the household as a whole owns any animals.

There is no impact of the CDGP on whether households report borrowing or saving any money in the past 12 months. We also find little evidence of any change in the total value of savings of CDGP households, either in cash or in-kind. However, there is a significant reduction in the value of the loans that households are themselves providing (of an average of around NGN 1,500).

Impact of the CDGP on knowledge, attitudes and practices regarding maternal health and infant and young child feeding (IYCF) practices

The CDGP has a large impact on a wide range of indicators measuring women's *knowledge and beliefs* about healthy breastfeeding and IYCF practices. Women in CDGP communities are more likely to report that it is best to start breastfeeding immediately or within 30 minutes of birth, that children should not receive something other than breast milk on the first day, that the

colostrum is good for the baby, and that it is not ok to give a baby under six months water when it is very hot outside.

There are similarly widespread impacts on *husbands' knowledge and beliefs*, which is important because it shows that the CDGP's impact on knowledge is spread across household members and does not exclusively affect women.

We also find that the CDGP leads to improved *practices*, in particular around the use of antenatal services, exclusive breastfeeding, and dietary diversity of young children. There are significant increases in the use of antenatal care (ANC) as a result of the CDGP. Indeed, the CDGP nearly doubles the actual utilisation of ANC services for women who were pregnant at the time of the midline survey relative to non-CDGP communities. Outside of accessing ANC services, however, the CDGP does not have a significant impact on the likelihood that a woman has visited a health facility to obtain treatment or medicines for herself or her children.

Notably, the CDGP significantly increases the proportion of mothers reporting that infants under six months of age are fed exclusively with breast milk. At midline, 70% of children under six months were reported as being exclusively breastfed in CDGP communities, compared to 28% of children in non-CDGP communities. This represents a considerable change. There are also improvements in the reported dietary diversity of older children, especially in terms of consumption of dairy products.

Impact of the CDGP on household demographics, poverty, expenditure, food security and sanitation

The CDGP ToC anticipates that the receipt of regular cash transfers will result in a substantial increase in household expenditure, and this is indeed what we observe. **Monthly household food expenditure increases by NGN 3,200, which is more than 90% of the size of the CDGP transfer.** We also find that **total household expenditure increases by more than the total value of the transfer,** with significant increases in non-food expenditure observed alongside the increased spending on food. This is consistent with the finding that, after accounting for the addition of the CDGP transfer, there is an increase in household income by a larger amount than the transfer value.

We find that the CDGP has large and positive impacts on household food security across all seasons, as measured by whether the respondent's household had enough food to eat at different points in the year. These impacts are larger in the seasons in which hunger is more prevalent.

Finally, within this domain we also examine whether there is any impact of the CDGP on the number of babies born. Given the large size of CDGP transfers relative to incomes, it is plausible that the CDGP might incentivise women to become pregnant, or bring forward pregnancies they were planning to have anyway. An alternative possible mechanism through which CDGP transfers may have an impact on the number of live births is through an impact on health-seeking behaviour, consumption and nutritional practices of women during their pregnancies, leading to a lower incidence of miscarriages. We do indeed find that **the percentage of women who gave birth to any child between baseline and midline is higher in CDGP communities compared to non-CDGP communities.** This in turn means that the number of biological children born after the baseline is slightly larger in CDGP communities compared to non-CDGP communities. However, we are not able to disentangle which of the possible mechanisms outlined above may be responsible for this.

Impact of the CDGP on women's nutritional status and wellbeing

There are few differences in the anthropometrics of women in CDGP and non-CDGP communities. We also find that **women in CDGP communities report a higher level of subjective wellbeing compared to women in non-CDGP communities**.

Impact of the CDGP on child health and development

The CDGP also leads to improvements in children's health outside of the area of nutrition. We observe statistically significant increases in the number of children who receive vaccinations, including for polio and measles. CDGP children also are more likely to get deworming treatment, less likely to have suffered a recent injury or illness, less likely to have recently had diarrhoea (although the incidence of diarrhoea remains very high) and are more likely to receive adequate care when they do have diarrhoea. These impacts on child health and preventive health behaviours for children are important, as they are known to be associated with malnutrition.

For new children born *after* the start of the CDGP, we find that the programme has a moderate impact on height-for-age and on the proportion of children stunted and severely stunted, which nevertheless remain at a very high level**. However, for this same group, the CDGP leads to a decrease in weight-for-height.** In other words, at any given age, children who were born after the start of the CDGP are taller in CDGP communities than in non-CDGP communities, but they are relatively thinner. This is not driven by a decrease in weight-for-age but rather by an increase in height-for-age, as a result of the programme. It is possible that early improvements in nutrition contribute to an increase in a child's height, but a chronic lack of access to adequate nutrition in this area, even in CDGP communities, prevents children's weight gains from keeping up with their height gains. It is striking how there is no impact of the CDGP anywhere in the distribution of weight-for-age, in spite of statistically significant but moderate impacts on height-for-age and moderate reductions in stunting rates.

Finally when we consider children who were born before the start of the CDGP (i.e. those aged between zero and five years at baseline), we no longer see any impacts of the CDGP on stunting. We also find no negative impact on wasting for this group. The fact that we do not find comparable findings for children who were already born when CDGP started, as compared to children exposed to the intervention *in utero* and very early in their lives, may provide support for the hypothesis that the first 1,000 days of life – from conception to age two – offer a critical window of opportunity within which to make meaningful investments in child health.

Testing the key evaluation hypotheses

This midline evaluation sought to test three key evaluation hypotheses. We now summarise our key findings in relation to each hypothesis.

Evaluation Hypothesis I: *The CDGP intervention, and in particular the provision of a regular transfer of NGN 3,500[2] on a monthly basis to women, will result in the consumption of larger quantities, and more varied types, of food, which in turn will result in an increase in dietary intake and consequently a reduction in child malnutrition.*

Midline finding: The CDGP is resulting in an increase in the quantity and quality (diversity) of food consumed. It has led to an increase in the height of children born during the CDGP intervention

[2] Adjusted upwards to NGN 4,000 per month from January 2017, in light of inflation.

period, but not in proportional increases in weight. The CDGP has also led to improvements in the stunting rates of young children, born during the implementation of the CDGP, but not in the stunting rates of older children who were already born when the programme started.

Evaluation Hypothesis II: *The provision of a regular predictable cash transfer will result in a reduction in negative risk-coping behaviour and, in particular, a reduction in the distress sale of assets and debt accumulation among beneficiary households.*

Midline finding: The CDGP is reducing the use of negative coping mechanisms cited by respondents in response to shocks. The programme has reduced households' need for external assistance (for example, from family and friends, or in terms of money borrowed). It has also significantly decreased the instances where family members have had to take on more work, or move away from the community in order to find work. We do not find that the CDGP has had a significant impact on the proportion of people selling assets to cope with food shortages, but at the same time selling assets is not found to be a primary coping mechanism.

Evaluation Hypothesis III: *Through nutritional advice and counselling the programme will improve the knowledge, attitudes and practices of the targeted men and women in relation to nutrition and general maternal and childcare practices.*

Midline finding: We find that the CDGP has a large impact on a wide range of indicators measuring men and women's knowledge about and attitudes toward healthy breastfeeding and IYCF practices. We also find significant effects on reported practices, including exclusive breastfeeding and use of antenatal services, among others.

Lessons about the CDGP and its impact

Based on the findings of the impact evaluation, we draw a number of lessons learned about this programme and the impact that it is achieving.

1. **In terms of targeting, the CDGP is reaching extremely vulnerable populations with a high incidence of serious health and nutrition problems.**
2. **The timing of the first payment varies widely across women, but women mainly receive their first payment only around the time of delivery.** Although the programme is designed to start the payment of transfers as soon as the woman is pregnant, for many of the mothers who were already pregnant at baseline, the first payment did not come until around the time of delivery. The timing of enrolment has, however, improved since then.
3. **Women generally retain control of the cash transfer and it is mostly spent on food.**
4. **It is important to provide BCC through multiple channels, since husbands and wives access messages from different sources.**
5. **There are no significant differences in implementation between high- and low-intensity BCC communities.** In practice, BCC appears to be implemented fairly similarly across all programme communities, regardless of their assigned intensity.
6. **The CDGP has positive impacts on the health, nutrition and development of young children in these communities.** This shows that a combination of cash transfers and information can generate important changes in the lives of children at very young ages.
7. **The CDGP leads to increases in the height of poor children, but not in proportional increases in weight.** It is plausible that children are receiving more nutritious foods that enable growth, or that the benefits of better breastfeeding practices enable growth – or

even that children are born less stunted to start with, to better nourished mothers – but then children do not receive enough calories to enable them to gain sufficient weight for their height.

8. **The CDGP leads to improvements in the stunting rates of young children, born during the implementation of the CDGP, but not in the stunting rates of older children, born before the beginning of the programme.** It is possible that the impacts of cash transfers and BCC on stunting only occur if the child is exposed *in utero* and slightly after.
9. **In spite of the positive impacts of the CDGP, the population in CDGP communities remains malnourished and subject to substantial food insecurity.**
10. **The CDGP has led to more children being born to women living in CDGP communities.** This may indicate an unintended fertility effect of the programme, but at this stage we are not able to conclusively determine the reason for this effect.

Based on these lessons it is clear that the CDGP can be a viable social protection instrument that has important effects on the health and nutritional wellbeing of children in the first 1,000 days of their lives. The programme would nevertheless require further review and adjustments to better lend itself to a scalable national programme. Review of the community voluntary approach, intensity of BCC, the payment levels and modalities and its link to broader institutional setting would be the first steps in this direction. While a social assistance programme that combines cash with BCC can, as demonstrated here, reduce malnutrition and improve child outcomes, its limitation in significantly improving child nutritional outcomes needs to be recognised. Placing a 'cash plus' programme within a broader set of complementary interventions focused on supply side issues is necessary. Moreover comparisons of the cost effectiveness of various nutrition focused interventions will shed further light on the appropriateness of each.

Recommendations for CDGP implementation

1. **Review enrolment procedure so payments can begin earlier in pregnancy.**
2. **Continue providing BCC through multiple channels because males and females access messages from different sources.**
3. **Review continuous enrolment procedures as not all women in CDGP communities who become pregnant are being enrolled in the programme.**
4. **There may be a need to review the design of the CDGP to ensure that there is no long-term effect on the total number of pregnancies per woman.** The results provide some evidence that there may be a fertility effect of the CDGP, although the mechanism behind this result is not yet clear. If this is the case, then we recommend that implementers consider ways to alter the design of the programme to mitigate the possibility that it will lead to an overall increase in the number of children per woman.

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List of abbreviations

ANC	Antenatal care
ASQ	Ages and Stages Questionnaire
BCC	Behaviour change campaign
BMI	Body mass index
CDGP	Child Development Grant Programme
CHEW	Community health extension worker
CV	Community volunteer
DFID	Department for International Development
FAO	Food and Agriculture Organization
HAZ	Height-for-age Z-score
HHS	Household Hunger Scale
IDDS	Individual Dietary Diversity Score
ITT	Intention to Treat
IYCF	Infant and young child feeding
KAP	Knowledge, attitudes and practices
LGA	Local government area
MDD	Minimum dietary diversity
MUAC	Mid-upper arm circumference
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
OPM	Oxford Policy Management
PPI	Progress out of Poverty Index
SD	Standard deviation
SE	Standard error
ToC	Theory of Change
WAZ	Weight-for-age Z-score
WHO	World Health Organization
WHZ	Weight-for-height Z-score

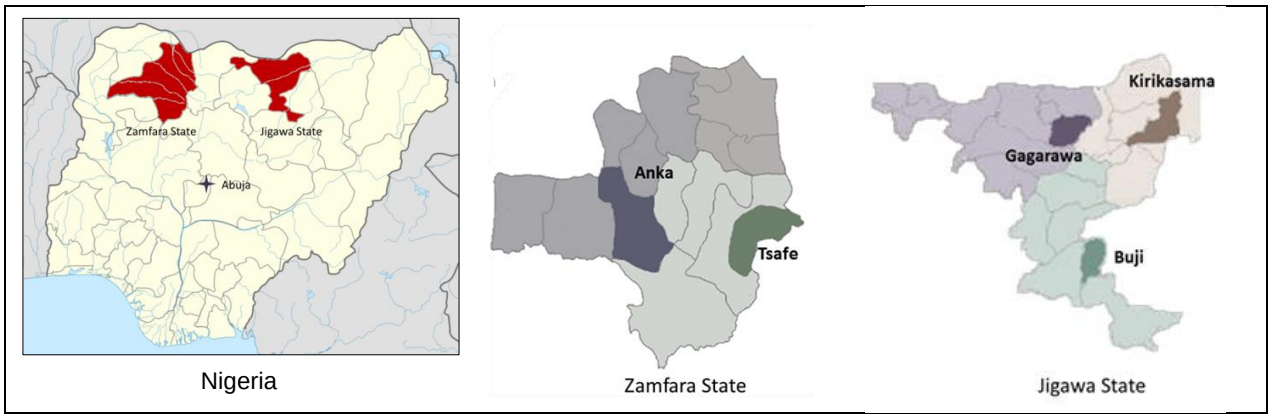
Part A: Background and method

1 Introduction

1.1 Overview of the CDGP

The CDGP is a six-year, DFID-funded pilot programme (2013–2019) that is being implemented in Zamfara and Jigawa states in northern Nigeria. The programme aims to test an approach to reducing widespread poverty, hunger and malnutrition, which affect the potential for children to survive and develop. The programme offers an unconditional cash transfer (aimed at tackling the economic causes of inadequate dietary intake) and a counselling and behaviour change campaign (BCC) (aimed at influencing maternal and childcare practices). The programme is implemented by Save the Children and Action Against Hunger in five local government areas (LGAs): Anka and Tsafe in Zamfara State, and Buji, Gagarawa and Kiri Kasama in Jigawa State (see Figure 2).

Figure 2: Location of the CDGP states and LGAs



Source: edited from maps retrieved from Wikimedia Commons and the Nigerian Chamber of Commerce website

The programme provides a cash transfer for up to 90,000 pregnant women and women with children under the age of two years (selected during pregnancy) for a period of approximately 33 months, targeting the first 1,000 days of a child's life[3]. The amount of the cash transfer was initially NGN 3,500 per month, and increased to NGN 4,000 from January 2017. This predictable cash transfer is expected to contribute to increased food security and improved intake of more nutritious food, leading to improvement in child nutrition.

Alongside the cash transfer, communities in the programme are provided with education and advice about nutrition and health, through a BCC component. This campaign is intended to influence key areas of knowledge and practice, including breastfeeding and infant diets, and is designed to address men and influential members of the community as well as the women who are the direct beneficiaries of the cash transfer.

The programme is set up to test two different designs of the BCC component:

3. 'Low-intensity' BCC delivered through posters, radio messaging, text messaging, health talks and food demonstrations; and
4. 'High-intensity' BCC delivered through support groups and one-to-one counselling for women receiving the transfer, in addition to all components of the 'low-intensity' BCC.

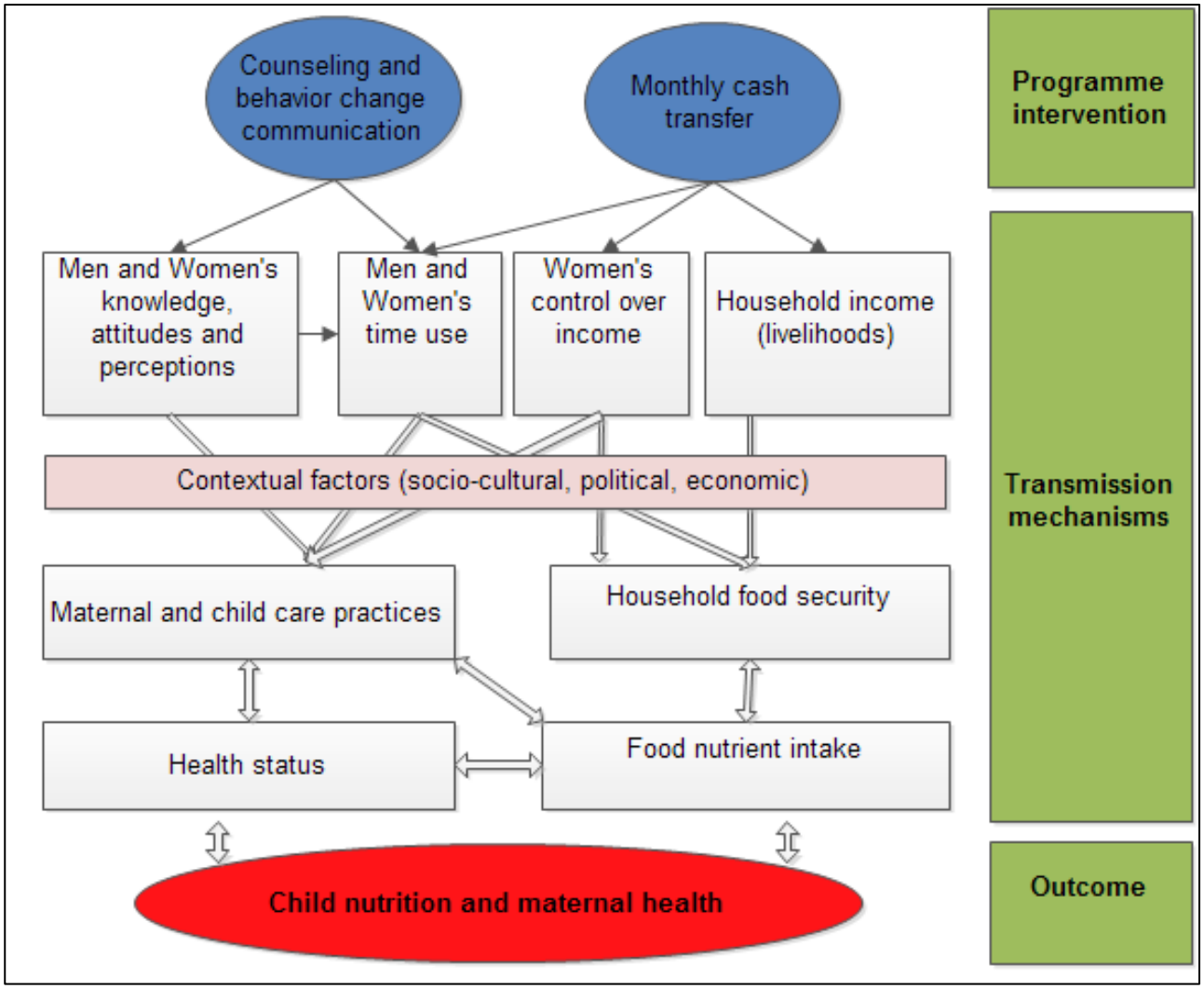
[3] The targeting of CDGP toward the first 1,000 days of life is in line with an established literature around the effectiveness of investments in child health and nutrition within this time period.

1.2 Programme Theory of Change

The Programme Theory of Change (ToC), which was developed by the evaluation team in consultation with the programme implementers, is summarised in Figure 3. As shown, it summarises *how* the programme interventions are expected to achieve the outcomes of improved child nutrition and maternal health. Between the interventions (in blue) and the outcome (in red), there are a number of expected intermediate effects and connections ('transmission mechanisms'):

- The *monthly cash transfer* is expected to increase beneficiary households' income and women's control over the use of income (for example, for food purchase). Indirectly, it is also expected to have an impact on men's and women's time use, and on their responses to seasonal risks and stresses. These effects in turn are expected to result in increased food security, and an increase in the quantity and quality of food consumed.
- The *counselling and BCC* are expected to influence women's and men's knowledge, attitudes, perceptions and time use, resulting in improved maternal and childcare practices and ultimately improved health and nutrition of women and children.

Figure 3: CDGP ToC



Source: e-Pact (2014) CDGP Evaluation Inception Report, p. 8.

1.3 Background to the evaluation and overall design

As agreed with DFID, and set out in the evaluation's inception report, the focus of the evaluation is to provide an understanding of the *impact* of the programme on the households and communities it supports.

The evaluation draws on a number of different methods (mixed methods) and interlinked workstreams for gathering evidence about the impact of the programme, including:

1. an initial **situation analysis**, which provided us with a strong contextual understanding of the poverty situation and the social and cultural dynamics within which households and communities in the two selected states operate. This study also identified other issues that we needed to consider and include in other parts of the evaluation;
2. a **quantitative impact evaluation** before the programme had started (baseline), a midline survey, and one toward the end (follow-up) in order to determine the effect of the programme on key impact and outcome indicators that measure child nutrition, as well as the knowledge, attitudes and wellbeing of those reached by the programme;
3. a **process evaluation** that: i) looked at how the programme was implemented after one year and identified the factors that supported or weakened implementation of the CDGP and its potential impact; and ii) will explore, toward the end of the programme, why it has or has not succeeded in achieving its outcomes; and
4. a **qualitative impact evaluation** that follows a small group of households receiving the programme through three rounds of data collection (baseline, midline and endline) and explores, through individual discussions, their views about the programme and its impact on issues that are more difficult to capture in a household survey. This is combined with a series of group discussions with other community members to deepen understanding of the impact of the programme and whether it has led to changes in attitudes or behaviour.

The evaluation has been designed to test a series of key hypotheses underpinning the programme's ToC. The key ToC hypotheses are outlined in Box 1 below. **The quantitative impact evaluation component aims to provide direct answers to evaluation hypotheses I–III, and supporting evidence for hypotheses IV, V and VI.**

Box 2: Key evaluation hypotheses

Addressed primarily by the quantitative impact evaluation:

Evaluation Hypothesis I: The CDGP intervention, and in particular the provision of a regular transfer of NGN 3,500 on a monthly basis to women, will result in the consumption of larger quantities, and more varied types, of food, resulting in an increase in dietary intake and consequently a reduction in child malnutrition.

Evaluation Hypothesis II: The provision of a regular predictable cash transfer will result in a reduction in negative risk-coping behaviour and, in particular, a reduction in the distress sale of assets and debt accumulation among beneficiary households.

Evaluation Hypothesis III: Through nutritional advice and counselling the programme will improve the knowledge, attitudes and practices (KAP) of the targeted men and women in relation to nutrition and general maternal and childcare practices.

Addressed primarily by the qualitative impact evaluation:

Evaluation Hypothesis IV: The cash transfer will result in improved material wellbeing and will contribute to the relational wellbeing of households through enhanced trust and reciprocal social and economic collaborations.

Evaluation Hypothesis V: The provision of a regular cash transfer to women will enhance their ability to make economic choices and will result in improved social capital.

Addressed primarily by the process evaluation:

Hypothesis VI: Poor implementation of the programme (i.e. poor targeting, irregular payments, inadequate information dissemination, and an inappropriate BCC campaign) will mitigate the potential impacts of the programme.

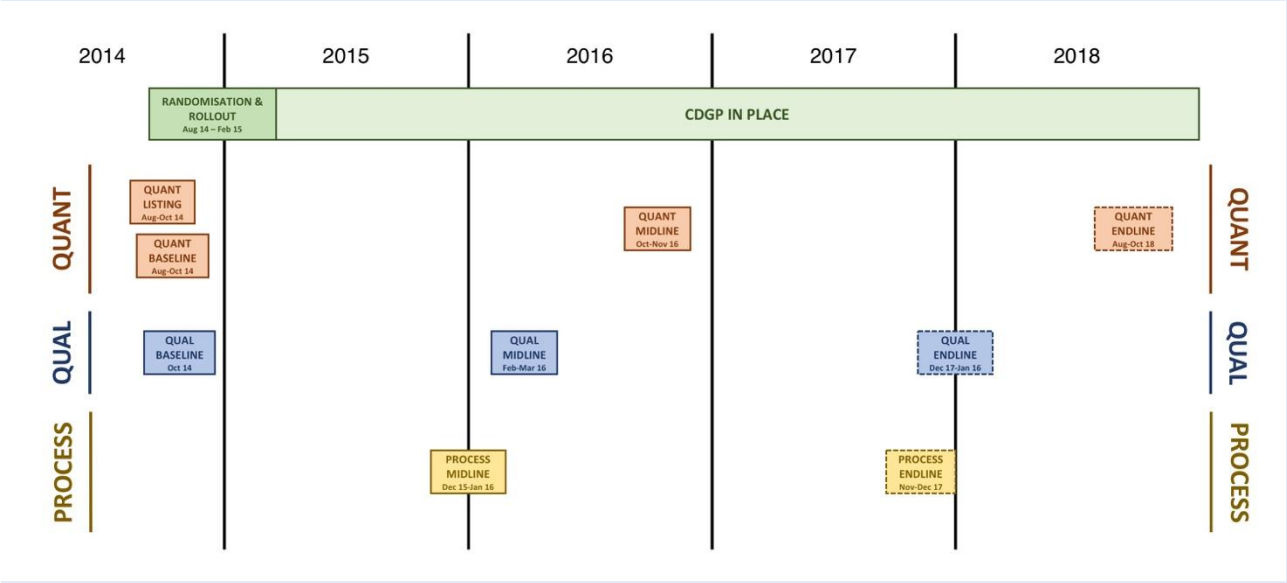
Source: Adapted from e-Pact (2014) *CDGP Evaluation Inception Report*, p. iv

The different workstreams inform each other's design and analysis through a sequenced and iterative process. At the beginning of the evaluation, prior to the commencement of the programme, the qualitative situation analysis informed the design of the programme as well as the baseline qualitative and quantitative evaluations. The quantitative baseline data was drawn on in analysing the qualitative household case studies. The qualitative and quantitative evaluation workstreams resulted in the production of two separate baseline reports, which were integrated into one summary report for the baseline. These baseline reports in turn informed the design and focus of the process evaluation. For this report, the qualitative team provided inputs into the midline by reviewing its data-collection instruments and proposed a number of questions to be incorporated. The midline qualitative findings and process evaluation results have supported the analysis of the midline quantitative results. Subsequent to generation of this report, the following workstream linkages will take place:

- An integrated summary report will be developed, drawing on the findings from the midline qualitative and quantitative reports as well as the process evaluation results.
- Midline results will inform the design and focus of the endline qualitative and process evaluations, which are expected to take place between December 2017 and March 2018.
- Findings from the endline qualitative and process evaluation will inform the design of the endline quantitative evaluation and support the interpretation of its results.
- A final summary report will draw on all the above evidence to evaluate the impact of the programme.

The timeline of the evaluation is shown in Figure 4.

Figure 4: Timeline of the CDGP evaluation



1.4 Objectives of this report

The current report presents the findings from the midline survey of the quantitative impact evaluation of the CDGP. It is based on information collected via household and community surveys between October and December 2016.

The objective of the report is to present results showing the effect of the CDGP, two years on from the baseline. It provides information on how the CDGP was rolled out in practice and how it has affected how households earn a living and obtain food, their knowledge of health practices for when pregnant or taking care of infants, views regarding fertility, marriage and use of health facilities, and, finally, the physical and mental development of their children. We summarise evidence from the midline survey on the evaluation hypotheses.

1.5 Intended audience

While the report contains a lot of technical detail, every effort has been made to ensure it is accessible to the non-technical reader. A shorter and simpler report summarising the quantitative and qualitative midline findings will also be made available later in 2017.

The primary users of this report fall into three categories, the first being the funders and implementers of the CDGP – there are a number of findings that have important implications for CDGP implementation, which are discussed in Chapter 10. In addition, the CDGP implementers can use the midline report to update midline point estimates of key impact and outcome indicators in the CDGP logframe.

The second category of users includes civil society, the research community in Nigeria (and indeed globally) and the donor community. The midline study provides the most recent update on a number of nutrition, health and welfare indicators for a sample of households in northern Nigeria.

Finally, the third category of users include federal, state and local governments. Data from the midline can be used to an evidence base that can be used to inform the design and implementation of the social protection policy and programmes.

Findings from the main report and the condensed report will be presented in a learning event, which will take place during the last quarter of 2017 in Abuja with representatives from all the end-user groups identified above and based on discussions with DFID and CDGP.

1.6 Structure of this report

This report is divided into two volumes. This is Volume I, which contains the key midline findings. More detail on the structure of Volume I is provided below. Volume II is a technical compendium that includes more detail on the evaluation methodology, the original Terms of Reference, and changes agreed to the Terms of Reference, and a full set of all our results tables.

Volume I is made up of 10 chapters, which are organised into three parts:

Part A outlines the evaluation design, and provides a guide for how to read the figures and tables in the report. This first part is comprised of the following chapters:

- Chapter 1 provides an introduction to the CDGP and the evaluation.
- Chapter 2 describes the programme ToC, the overall evaluation hypotheses and questions, and a short summary of the overall design and methodology of this evaluation. Further details on these aspects can also be found in Volume II.

Part B describes our findings and analysis. This part is comprised the following chapters:

- Chapter 3 describes the key characteristics of the communities and households interviewed as part of the midline survey for the CDGP.
- Chapter 4 describes our findings on how the cash and BCC components have been implemented, and how the cash has been used.
- Chapter 5, describes how the CDGP has impacted the livelihoods of women in the sample households, and their husbands. This includes animal rearing, land cultivation and other work activities, as well as borrowing, lending and savings.
- Chapter 6 describes the impact of the CDGP on KAP regarding maternal health and infant and young child feeding (IYCF) practices, with a particular focus on the areas that the CDGP was aiming to influence.
- Chapter 7 describes the impact of the CDGP on household demographics (including on fertility) and on household poverty, expenditure, food security and sanitation.
- Chapter 8 looks at how the CDGP has impacted women's nutritional status and wellbeing.
- Chapter 9 assesses the impact of the CDGP on child health and development, including the nutritional status of children, which is measured using four primary indicators: weight-for-height, height-for-age, weight-for-age, and mid-upper arm circumference (MUAC).

Part C (Chapter 10) presents our conclusions, drawing out key implications for the implementation and design of the CDGP.

In Annex A we have included a guide on how to read the figures and tables presented throughout the rest of the report. In Annex B we present the results of a robustness check to our main impact estimation, by reporting impacts based on actual receipt of the programme.

2 Quantitative evaluation design and methodology

2.1 The evaluation hypothesis

The evaluation is designed to test five key hypotheses that underpin the programme's ToC. The quantitative impact evaluation component aims to provide direct answers to evaluation hypotheses I–III, and supporting evidence for hypotheses IV, V and VI.

Hypothesis I: The CDGP intervention and in particular the provision of a regular transfer of NGN 3,500[4] on a monthly basis to women will result in consumption of larger quantities, and more varied types, of food, resulting in an increase in dietary intake and consequently a reduction in child malnutrition.

Underlying assumption: Households do not currently meet their food requirements and will use the transfer for food consumption rather than for other purposes. It is also expected that households will direct the transfer to the most nutritious food and not only on the basic staple diet. This hypothesis also assumes that the transfer will be a sufficient additional source of income, with a limited substitution effect on other livelihoods mechanisms.

Hypothesis II: The provision of a regular predictable cash transfer will result in a reduction in negative risk-coping behaviour and in particular a reduction in the distress sale of assets and debt accumulation among beneficiary households.

Underlying assumption: Beneficiary households are currently engaged in detrimental risk-coping behaviour and the transfer is sufficient in enabling them to disengage from this behaviour.

Hypothesis III: Through nutritional advice and counselling the programme will improve the KAP of the targeted men and women on nutrition and general maternal and childcare practices.

Underlying assumption: Current KAP are a contributory factor in the poor dietary and health practices of households. This will also depend on the nature and quality of advice and counselling combined with the availability of good complementary services and support (e.g. health facilities, accessibility of clean water, general hygiene and sanitation practices, etc.).

Hypothesis IV: The cash transfer will result in improved material wellbeing and contribute to the relational wellbeing of households through enhanced trust and reciprocal social and economic collaborations.

Underlying assumption: The programme does not negatively impact on existing social networks and sharing practices and that the impact on gender dynamics at the household level is positive.

Hypothesis V: Provision of a regular cash transfer to women will enhance their ability to make economic choices and result in improved social capital.

Underlying assumption: The beneficiary women are able to use the cash transfer as they intend and wider cultural norms are sensitively challenged, while the process is supported through community sensitisation with men and community leaders. If the cash transfer is seen as an unearned windfall it may not be controlled by the woman and may be controlled by the man, with benefits divided among the households.

[4] This was subsequently adjusted to NGN 4,000.

Hypothesis VI: Poor implementation of the programme (i.e. poor targeting, irregular payments, inadequate information dissemination, and an inappropriate BCC campaign) will mitigate the potential impacts of the programme.

2.2 Method

The quantitative impact evaluation is a cluster randomised controlled trial, in which communities were randomly selected either to receive support from the programme or not to receive support. The effects of the intervention are found by comparing households in the communities where the programme was operating with households in communities where it was not. Households that are randomly chosen to receive the CDGP are called 'treated households' and are in the 'treatment group'. Households that are randomly chosen to not to receive the CDGP are called 'control households' and are in the 'control group'. Randomisation is considered the most rigorous way to measure the effect of the CDGP on beneficiary households because it ensures that treatment and control groups have similar characteristics at the start of the evaluation. Thus, any differences observed at the end of the programme can be attributed to the intervention.

This evaluation has two treatment groups and one control group. The first treatment group (henceforth known as Treatment 1) is offered the cash transfer and 'low-intensity' BCC. The second treatment group (henceforth known as Treatment 2) is offered the cash transfer and 'high-intensity' BCC.[5] The control group receives no intervention for the duration of the evaluation, but may receive the intervention after the second household survey is completed in 2018, depending on availability of funding. The reason for having two separate treatment groups and one control group is to be able to measure the impact of the unconditional cash transfer and 'low-intensity' BCC as well as the additional effect of providing 'high-intensity' BCC.

The unit of randomisation is the village. This means that we randomly chose which villages would be in Treatment 1, Treatment 2 and the control group. The below figures show the location of the 'high-intensity BCC' CDGP communities, the 'low-intensity BCC' CDGP communities and the non-CDGP communities that are included in the evaluation in the five CDGP LGAs. As shown in the graphs, the non-CDGP communities come from the same LGAs as the CDGP communities and thus are likely to be exposed to similar external factors (such as inflation, access to markets, availability of foodstuffs, availability of seasonal work, etc.). This means that when we compare average outcomes from households in CDGP communities with average outcomes from households in non-CDGP communities we can be confident that the any differences observed are due to the CDGP.

[5] As discussed in Section 1.1, 'low-intensity' BCC is delivered through posters, radio messaging, text messaging, health talks and food demonstrations, while 'high-intensity' BCC is delivered through support groups and one-to-one counselling for women receiving the transfer, in addition to all components of the 'low-intensity' BCC.

Figure 5: Evaluation villages in Tsafe, Zamfara

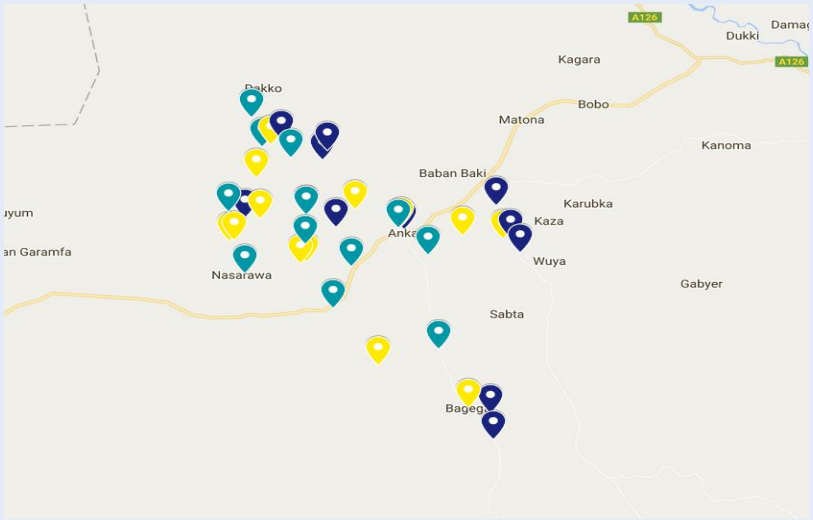
High-intensity BCC CDGP communities

Low-intensity BCC CDGP communities

Non-CDGP communities

Source: CDGP midline data.

Figure 6: Evaluation villages in Anka, Zamfara



High-intensity BCC CDGP communities

Low-intensity BCC CDGP communities

Non-CDGP communities

Source: CDGP midline data.

Figure 7: Evaluation villages in Buji, Jigawa

High-intensity BCC CDGP communities

Low-intensity BCC CDGP communities

Non-CDGP communities

Source: CDGP midline data.

Figure 8: Evaluation villages in Gagarawa, Jigawa

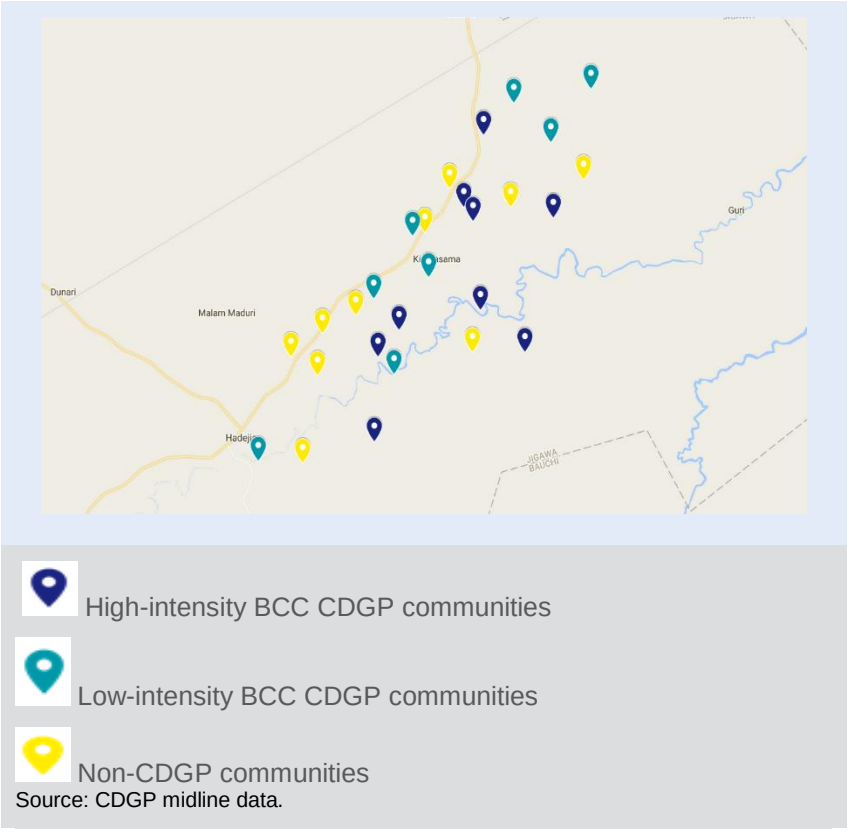
High-intensity BCC CDGP communities

Low-intensity BCC CDGP communities

Non-CDGP communities

Source: CDGP midline data.

Figure 9: Evaluation villages in Kirikasama, Jigawa



Source: CDGP midline data.

Unfortunately, it has not been possible to test the additional effect of the high-intensity BCC because the programme has not been implemented in the intended way. When examining the access to BCC channels (posters, SMS messaging, radio messaging, health talks, food demonstrations, small group meetings and one-to-one counselling) in CDGP communities, we found that people in both high- and low-intensity communities reported similar rates of exposure to each channel, including the high-intensity channels (which were only meant to be offered in the high-intensity BCC communities). For example, 51% of women who were pregnant at baseline in the low-intensity communities report having attended small group meetings, while this proportion is 63.1% in the high-intensity group. This suggests that BCC implementation on the ground was quite similar in both low- and high-intensity communities. Additionally, across most of the indicators we examine, we did not find differences between the low- and high-intensity communities. Again, this seems to confirm that the implementation of BCC activities was similar across low- and high-intensity communities.

Therefore, in this report we combine the low-intensity CDGP communities and high-intensity CDGP communities to make one group comprising all CDGP evaluation communities. We then compare the CDGP communities with the non-CDGP communities to estimate the effect of the CDGP.

Baseline data was collected from households across both treatment and control groups from August to October 2014 and midline data was collected from October to November 2016.[6] Data will be collected from the same households in the endline survey in 2018, after four years of programme implementation.

[6] There is the potential for seasonal differences between the baseline and midline. However, in our analysis we are comparing CDGP communities with non-CDGP communities at midline only and thus any seasonal differences will not affect our results. Data for both CDGP and non-CDGP communities was collected over the same period at midline.

The surveys collect information on households' ability to obtain sufficient and nutritionally diversified food, the risks households face, their access to basic services (including health and markets), their knowledge of and attitudes toward decision-making and health practices for mothers and newborn children. Children's weight, height and MUAC are also measured.

The majority of the households surveyed at baseline were households with at least one pregnant woman, but in villages where we were not able to find enough households with pregnant women to make up a large enough sample, we also surveyed households with women likely to become pregnant during the next three years. We refer to this woman throughout the report at the 'index woman'.

In the baseline survey, data was collected from a total of 5,436 households, which included data from 5,436 index women (3,692 pregnant and 1,744 likely to become pregnant) and their husbands, and 4,180 children aged 0–59 months.

At midline, 4,783 households were successfully surveyed.[7] In 4,628 (96.8%) of these households, the woman we interviewed at baseline was found and administered the woman survey. In the case of 155 (3.2%) households, the index woman had died or was temporarily away when the teams were in the field; a shortened version of the questionnaires for the woman and children was thus administered. Among the women surveyed, 3,225 were pregnant at baseline (and hence eligible for the CDGP if they lived in a CDGP community). The households where these women reside constitute our main analysis sample. In most cases – 4,693 (98.2%) – the index woman's husband was successfully identified. More than half of the women's husbands were interviewed directly – 2,877 (60.2%). In 1,816 cases (38%), the husband was not available to be interviewed or refused, and a subset of questions about the household was thus asked in the household to whoever was in the best position to answer for the husband (including the woman herself or the household head). In the end, we have some information for 4,652 husbands. Of the 4,180 children surveyed at baseline (who were ages 0–5 at baseline), the teams were able to trace and survey 3,286.[8] In addition, we collected data for 3,691 children born after the baseline interview.

In summary, the midline sample has 4,783 households, including data from 4,628 women (of which 3,225 (67.5%) were pregnant at baseline and constitute our main analysis sample), 4,652 husbands, 3,286 children that were aged under five at baseline, and 3,691 children that were born after the baseline interview (of which 2,718 (73.6%) were born to mothers who were pregnant at baseline).

Our estimates of the impact of the CDGP are based on a subsample of the households we surveyed at midline. In particular, we focus on the households where the index woman reported being pregnant at baseline. All estimates of the effect of the CDGP contained in this report are found by comparing the outcomes of women who were pregnant at baseline (and their households/husbands/children) residing in CDGP communities to women who were pregnant at baseline (and their households/husbands/children) residing in non-CDGP communities.[9] We compare the outcomes of these women at midline. In our baseline report we showed that women in CDGP communities and those living in non-CDGP communities were not different on average; we can therefore be confident that any differences observed at midline are a result of the CDGP.

[7] The majority of attrition was due to our survey teams being unable to access some villages at midline due to insecurity in those areas.
[8] Again, the majority of attrition was due to insecurity in certain areas.
[9] This method of analysis may be referred to as 'single-difference'. This means that we are drawing a comparison between outcomes observed at midline, rather than comparing the difference in the change in outcomes between baseline and midline (a double-difference, or 'differences in differences' approach). As described above, we compared the outcomes at baseline between women in CDGP and non-CDGP communities to show that these communities were not different on average before the CDGP started.

The comparison we make is between women who reported being pregnant at baseline in CDGP communities with women who reported being pregnant at baseline in non-CDGP communities, *regardless of whether they actually received the programme or not*. This is the simplest possible comparison, which measures the impact of programme *availability* on outcomes. This is to ensure that the effects we measure are pertaining to women who were eligible to receive the cash component of the CDGP at the beginning of the study. We do this so that our results are not subject to any selection bias, which could be the case if we only compared women who actually ended up receiving the programme and if these women were in some ways different from those who did not end up receiving the programme. Selection bias could arise if some women try to get pregnant in order to receive CDGP payments, and if these women are in some way different from the women who do not try to get pregnant in order to receive the CDGP. This measure of impact is called the Intention to Treat (ITT) estimate because it considers women who the programme intended to enrol and not only those who did actually enrol. The ITT estimate can, however, result in an underestimation of the effect of the programme because some people in the treatment group do not actually receive the programme.[10]

An additional aspect of the ITT estimates that should be kept in mind is the possible presence of spillovers. Some of the households residing in non-CDGP areas might have been indirectly exposed to some components of the programme, especially the behaviour change messages. It has been documented in the qualitative midline report that such messages can spread quite rapidly to non-beneficiary women within the same community (Sharp & Cornelius, 2017). If such information spreads to neighbouring non-CDGP villages, an improvement in knowledge and practices might be observed in those areas as well. This may represent an additional reason why the ITT estimate could underestimate the true effect of CDPG.

As discussed above, apart from women who were pregnant at baseline, the remainder of our sample is made up of women who were not pregnant at baseline. Women who were not pregnant at baseline are not included in our sample when estimating the impact of the CDGP throughout this report. There is one exception to this. In particular, we look at the sample of women who were not pregnant at baseline to understand if the CDGP had an effect on fertility choices.

A detailed description of the method is presented in Volume II.

2.3 Limitations

This section outlines the limitations of the evaluation, and describes how these limitations might affect the interpretation of our findings and the conclusions presented in this report.

We are not able to estimate the additional effects of the high-intensity form of behaviour change communication

Comparisons between villages receiving high- and low-intensity versions of BCC do not reveal any pattern of significantly different effects. This might be because the high-intensity BCC is ineffective, or because the programme was actually implemented in similar ways across the two modalities. In this report, we present evidence that suggest the latter. In Section 3 we show that implementation of the BCC component of the programme was similar in villages randomised to high- and low-intensity. The percentage of women and their husbands who report being exposed to support

[10] In view of this potential for the ITT estimates to underestimate the impact of CDGP for women who actually received the programme, we also carry out a 'treatment on the treated' (TOT). TOT estimates are performed by comparing women who reported being pregnant at baseline in CDGP communities, who actually received at least one payment from CDGP, with women who reported being pregnant at baseline in non-CDGP communities. The findings of this analysis are presented in Annex B of this report.

groups and one-to-one counselling is similar in the two types of village. This led us to present all impact results by pooling both groups of villages together. Regardless of this limitation, the impacts in this report are still valid estimates of the overall CDGP strategy – namely the bundling of cash and information to improve household welfare and children outcomes.

The effects presented in this report are likely an underestimation of the true effects of CDGP

Our evaluation design effectively excludes prior differences in household characteristics, so that we can confidently attribute the estimated impacts to CDGP. However, the effects we present are likely to be underestimating the true effects of the programme. This is for two main reasons:

- Some imperfections in the implementation of the programme resulted in imperfect coverage of women reporting to be pregnant at baseline, with 83% of them actually receiving the grant. Net of errors in assessing pregnancy at baseline, this means that not all the women in CDGP villages ended up receiving the grant. We also observe a small proportion (7%) of women in non-CDGP villages receiving the cash grant.

- There is the possibility that some of the knowledge effects introduced by CDGP have 'spilled over' to non-CDGP villages, improving measured outcomes.

In both cases (as explained in more detail in Section 2 and in Section 9 of Vol. II of this report) our ITT approach would lead to smaller estimates of the effects of the programme. As such, the estimates should be viewed as 'lower bounds' of the true effect. While this approach might not provide the most accurate picture of the impacts, it avoids problems of bias in selection while remaining conservative; this arguably makes the estimated effects more believable.

The report evaluates an 'early' version of the programme

By focusing on women who were already pregnant at baseline, the report presents evidence from women who enrolled in the programme in its earliest phase. Despite the pilot, the CDGP rollout was not without issues. On the cash side, some delays in enrolment and disbursement of payments were observed, while on the BCC side many activities did not take off until early 2015, some months after the baseline data. As highlighted in Section 4.3, many mothers started receiving payments late in the pregnancy or around birth. This might attenuate some of the impacts of the programme. The implementation of both aspects of the programme has significantly improved in the recent period.

Our sample is not representative of the population in the areas in question

There are two reasons for the lack of representativeness:

- We only selected households where at least one woman was pregnant (or likely to become so) immediately prior to the start of the programme. These households are obviously not representative of all households in the sampled communities.

- Our sampling strategy (detailed in Sections 5 and 6 of Vol. II of this report) over-represents households residing in smaller villages. Given the lack of census data for these areas, we do not attempt to reconstruct weights to balance the analysis.

However, the effects we estimate are representative of a specific population (households with fertile women) that is arguably of great policy interest. The evaluation also covers all the villages

where the CDGP programme is operating (with the exception of the 15 pilot villages) and thus provides a very robust estimate of the effect of CDGP.

There is a risk of self-reporting bias for some outcomes

Some of the outcomes considered in the survey may be subject to self-reporting bias, since they are not directly observed but instead asked of respondents. For some particular outcomes, such as IYCF practices and nutrition, respondents might have an incentive to overstate their compliance with correct practices, especially if these are stressed in BCC communication. This should be less of an issue with more 'neutral' outcomes such as activities or expenditures. Moreover, anthropometric measurements are taken directly by our trained survey teams, bypassing self-reports entirely.

The time horizon for the evaluation is short

It can be argued that a number of outcomes examined in the report will not change appreciably in the short-term perspective adopted in this report (around two years). This is particularly true for children's nutritional status, where effects might take longer to manifest themselves. We believe that the picture presented in this report will nevertheless convey very important findings, and will positively inform the endline evaluation process.

The sample size was significantly reduced compared to baseline

Overall, it was not possible to interview 12% of the households surveyed at baseline. This is vastly due to security issues that prevented the survey teams from visiting 18 of the evaluation communities. This might have reduced the power of our analysis to detect effects. We present a recalculation of design effects for this new scenario in Vol. II of this report. Attempts will be made to include these households in the endline survey.

2.4 How to read tables and figures in this report

The following sections of this report describe our findings. In each section we present our results in a series of tables and figures. Our results tables follow a standard format, and we use four different types of figure to present different kinds of results. Annex A contains a detailed description of how the tables and figures in this report are laid out, and is a source of reference to help interpret them.

Part B: Findings and analysis

3 Context

To build a contextual understanding of the setting in which our evaluation of the CDGP takes place, we first document some key features of the economic environment faced by communities in our evaluation sample.[11]

Key findings

CDGP operates in a fragile and conflict affected area where both natural and made-made shocks are common. We find that around 85% of all communities have been impacted by some shock related to natural causes since the baseline period. This includes floods, drought and crop damage caused by pests. Man-made shocks are slightly less frequent, although they are still reported to impact the majority of communities. The most frequent types of man-made shock are those related to mass movements of individuals or cattle rustling. Curfews and cattle rustling are far more predominant in Zamfara, and crop damage more prevalent in Jigawa. We find that CDGP and non-CDGP communities are equally likely to be affected by each type of natural and man-made shock.

Although only a minority of communities have their own market where households can buy foods and other goods, or a health facility, the majority of communities are located less than 1km from the nearest market or health facility. There are few differences by state in terms of these community facilities and there are no significant differences in distance to services between non-CDGP and CDGP communities.

Around 45% of communities have some programme other than the CDGP operating in them, although this is not different between CDGP and non-CDGP communities.

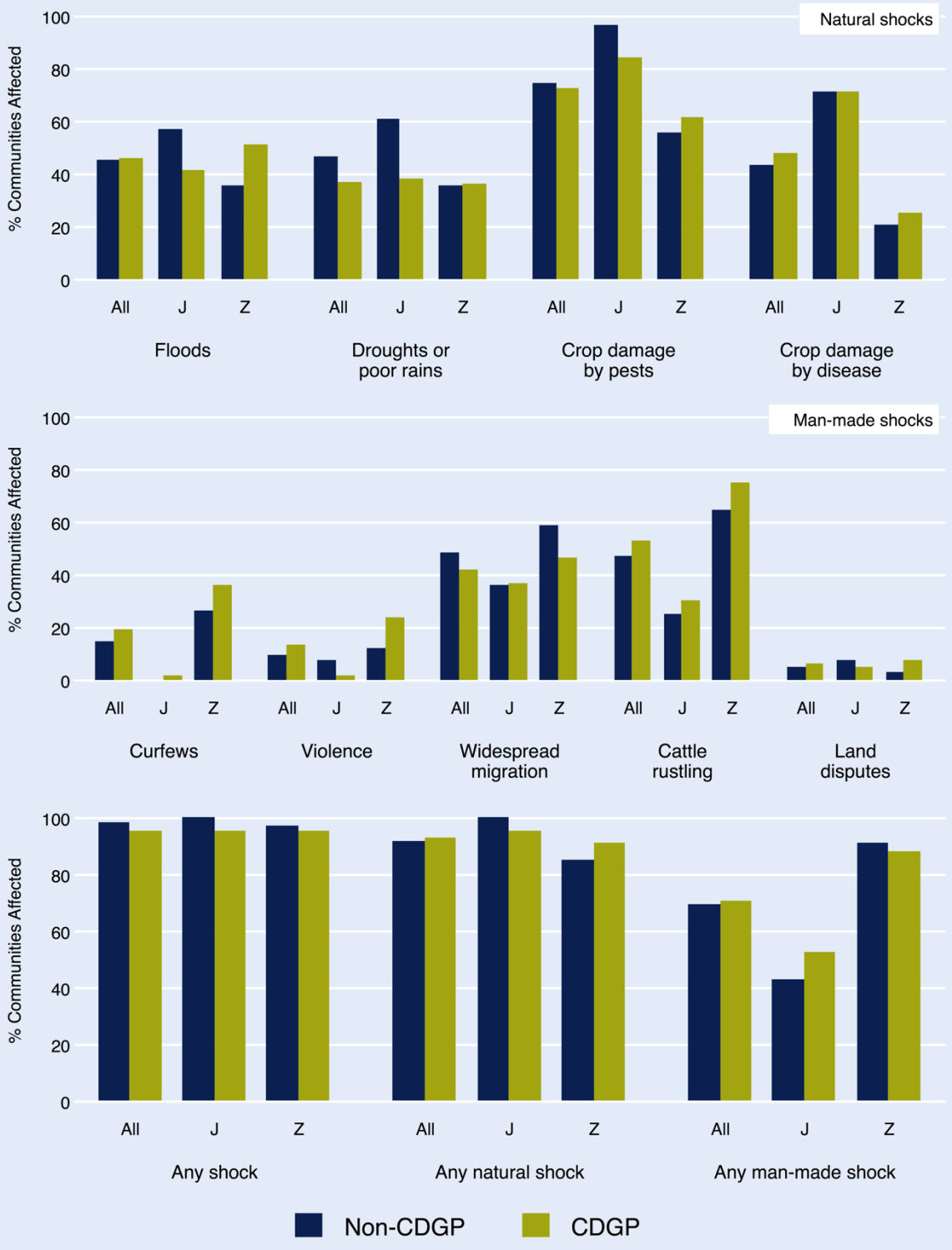
To begin with, Figure 10 shows whether, since baseline, evaluation communities have been impacted by various types of shock. These shocks are divided into those related to natural causes and those that are man-made. Many of these shocks have the potential to affect market prices and access to services such as health facilities and food markets. In terms of shocks related to natural causes, around 85% of all evaluation communities have been impacted by some shock, be it a flood, drought or crop damage caused by pests. Man-made shocks are slightly less frequent, although they are still reported to impact the majority of communities. The most frequent types of man-made shock are those related to mass movements of individuals or cattle rustling.[12]

Both states in the evaluation sample are impacted by these kinds of shocks (with curfews and cattle rustling being far more predominant in Zamfara, and crop damage more prevalent in Jigawa), and CDGP and non-CDGP communities are equally likely to be affected by each type of natural and man-made shock. In Volume II, we report more detailed statistics related to the incidence of these kinds of shock, how long such shocks lasted for, and the kinds of consequence they had in terms of disruption of village life and the local economy.

[11] The socio-economic and demographic context of the LGAs and states where the CDGP intervention and its evaluation occur have also been explored elsewhere. See Leavy, et al. (2014) for an initial 'situation analysis' of the evaluation LGAs, which describes their poverty situation, social and cultural dynamics, and practices and attitudes around dietary and feeding practices, among other themes.

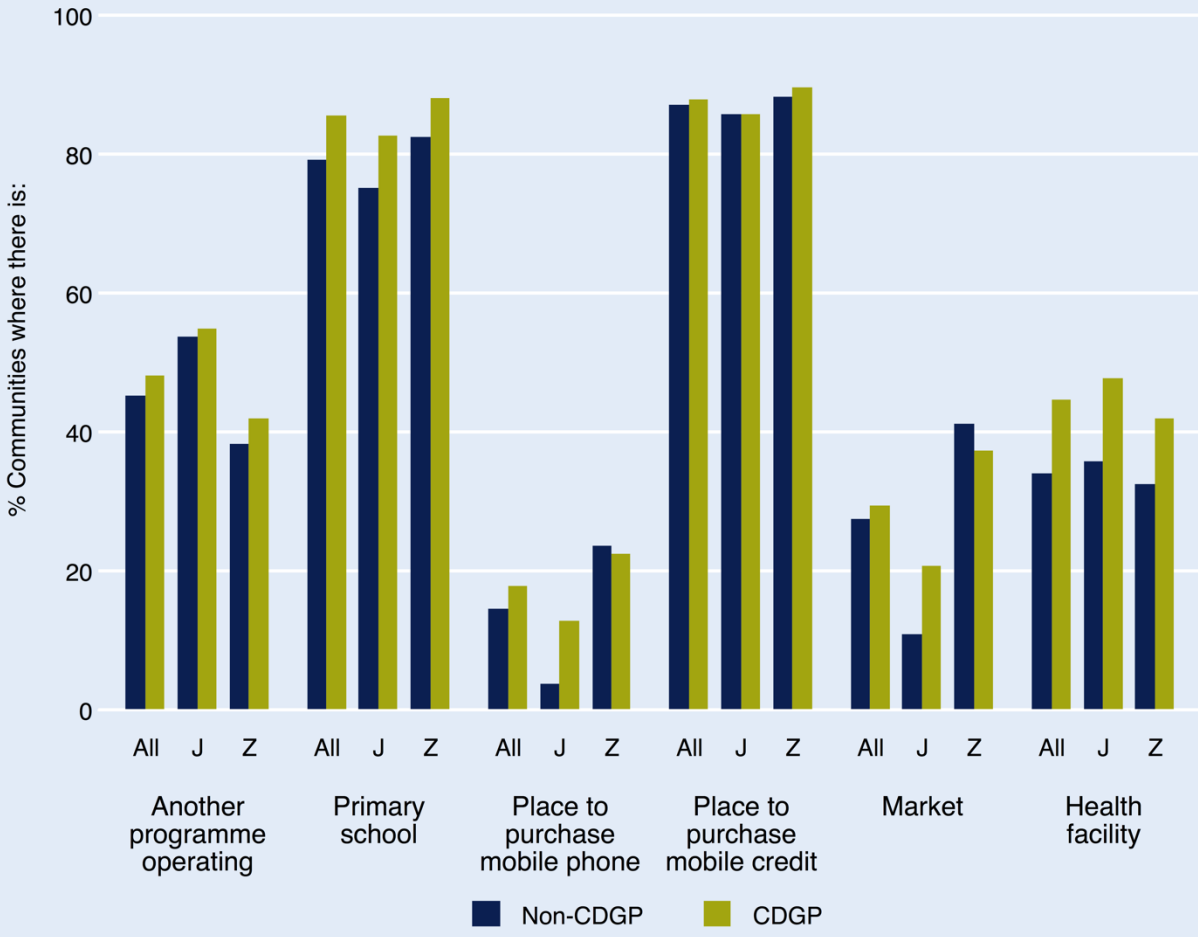
[12] Note that man-made shocks are more common than in our baseline community survey simply because we added cattle rustling and land disputes as forms of man-made shock to our community survey.

Figure 10: Proportion of evaluation communities affected by shocks



Source: CDGP midline data. Notes:
1. The sample is study communities surveyed at midline. All = both states, J = Jigawa, Z = Zamfara.
2. The height of the bar represents the percentage of communities affected by each shock. All estimates are unweighted.

Figure 11: Proportion of evaluation communities with access to basic services



Source: CDGP midline data. Notes:
1. The sample is study communities surveyed at midline. All = both states, J = Jigawa, Z = Zamfara.
2. The height of the bar represents the percentage of communities where each of the facilities is present. All estimates are unweighted.

One concern for the evaluation would be if CDGP and non-CDGP were differentially the recipients of other types of programmes. The first set of bars in Figure 11 show this not to be the case: around 45% of communities have some other programme operating in them, although this is not different between CDGP and non-CDGP communities. Volume II provides further details on the kinds of other programme operating in the evaluation communities and the organisations behind such programmes (e.g. local government, non-government organisations (NGOs), faith groups, etc.).

In terms of the facilities available in communities, we see that only a minority of communities have a market where households can buy a range of foods, or a health facility, located inside them. In relation to the programme intervention, we note that the majority of communities do have a location to purchase mobile phone credit in them. Again, there are few differences by state in terms of these community facilities.

Table 1: Distance between communities and facilities

	Midline				Difference between CDGP and non-CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Distance from closest health facility (km – straight line)	61	**1.44**	124	**1.54**	0.13	0.01
		(1.53)		(1.52)	(0.24)	(0.27)
% of communities whose distance from closest health facility is:						
Under 1 km	61	**57**	124	**54**	-3.51	3.71
					(7.81)	(9.12)
1 to 5 km	61	**39**	124	**44**	4.79	-3.61
					(7.72)	(9.08)
More than 5 km	61	**3.3**	124	**1.6**	-1.28	-0.10
					(2.57)	(2.44)
Distance from closest market (km – straight line)	61	**1.86**	124	**2.26**	0.37	-0.67
		(2.38)		(2.36)	(0.36)	(0.42)
Jigawa	28	**2.27**	59	**2.55**	0.25	-0.67
		(2.80)		(2.55)	(0.59)	(0.65)
Zamfara	33	**1.52**	65	**1.99**	0.47	-0.67
		(1.93)		(2.16)	(0.44)	(0.54)
% of communities whose distance from closest market is:						
Under 1 km	61	**54**	124	**47**	-6.39	14.13
					(7.53)	(9.24)
1 to 5 km	61	**33**	124	**38**	4.39	-13.85
					(7.50)	(9.01)
More than 5 km	61	**13**	124	**15**	2.00	-0.28
					(5.43)	(6.21)

Source: CDGP midline data. Notes:
1. The sample is study communities surveyed at midline
2. Mean = unweighted estimate of the mean. Standard deviation (SD) is reported for continuous indicators only.
3. Difference between CDGP and non-CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both differences are estimated by Ordinary Least Squares (OLS) regression with LGA fixed effects and standard errors (SE) clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. Distances reported in this table are geodesic distances, i.e. they use mathematical approximations to take into account the earth's curvature. They are computed using the STATA program *geodist* (Picard, 2010).

As part of the midline survey, we collected the GPS coordinates of communities in our sample and the health facilities and markets that serve these communities (see Section 2.2). This enables us to compute distances between each community and each market and health facility. These distances are geodesic, or 'as the crow flies'. Table 1 above reports the average distance of CDGP communities from the nearest health facility and market, as well as the proportion of communities that lie within 1 km. We can see that slightly less than half of the communities are very near a market or a health facility.[13] The qualitative research findings also show that a lot of exchange and purchase of food takes place between households or through local small retailers (i.e. outside formal market places). It should also be noted that, as expected from the randomised nature of the programme, there are no significant differences in distance between non-CDGP and CDGP communities.

[13] The maximum distances from the closest health facility and market to a community in our sample are 7.6 km and 9.5 km respectively.

4 Implementation of the CDGP

In this section, we provide important details on the functioning and practical implementation of the CDGP, across states and in both versions of the programme (low- and high-intensity BCC messages). This helps establish whether the programme was operating largely as intended, and how the programme was rolled out in high and low intensity BCC communities.

Key findings

Knowledge of the CDGP is widespread in CDGP communities and participation among eligible households is high. Over 95% of women in our sample who were pregnant at baseline report knowledge of the programme (with slightly higher knowledge of the programme in high-intensity BCC communities). Around 84% of women who were pregnant during the baseline in both low- and high-intensity CDGP communities ended up participating in the programme. **In non-CDGP areas, we find that 7% of women pregnant at baseline ended up receiving payments from the CDGP.** This could be due a number of factors including the programme being rolled out in the wrong communities by error, or fraudulent activities.

There is variation in the stage of pregnancy when payments started for different women in CDGP communities. While some women receive their first payment early in pregnancy, the majority received their first payment around the time of delivery, and some only receive it after delivery. The programme is intended to target women from the time they become pregnant, so the incidence of payments occurring around the time of delivery or afterwards constitute delays in programme implementation. The programme implementers have already tried to address this and we do see enrolment taking place about the 5th month of pregnancy.

Women generally retain control over the transfer, rather than their husbands or someone else determining how it is spent. **Most households report spending the majority of the transfer on food**. Aside from food, a good share of the remainder of the transfer is used for other child-related expenditures (such as on health and clothing).

We do not find large differences between the high- and low-intensity CDGP communities in the reported access they have to different channels of information. Although both men and women are slightly more likely to report having been exposed to a high-frequency channel if they live in a high-intensity BCC community, these differences are small, indicating few on-the-ground differences in how the low- and high-intensity BCC versions of the CDGP operated in practice. Therefore this evaluation cannot assess the relative effectiveness of the two approaches as was originally intended. **As a result, most of our evaluation findings will pool the evidence from high- and low-intensity BCC CDGP communities.**

We do see **some differences between men and women in the BCC channels that they have had access to.** For women, the channels most frequently reported are posters, followed by food demonstrations. For their husbands, the most frequent channels reported for information dissemination were the radio and posters. Women recalled messages related to exclusive breastfeeding and eating nutritious foods most frequently, whereas for men, there is a more uniform recall of various BCC messages for any given channel.

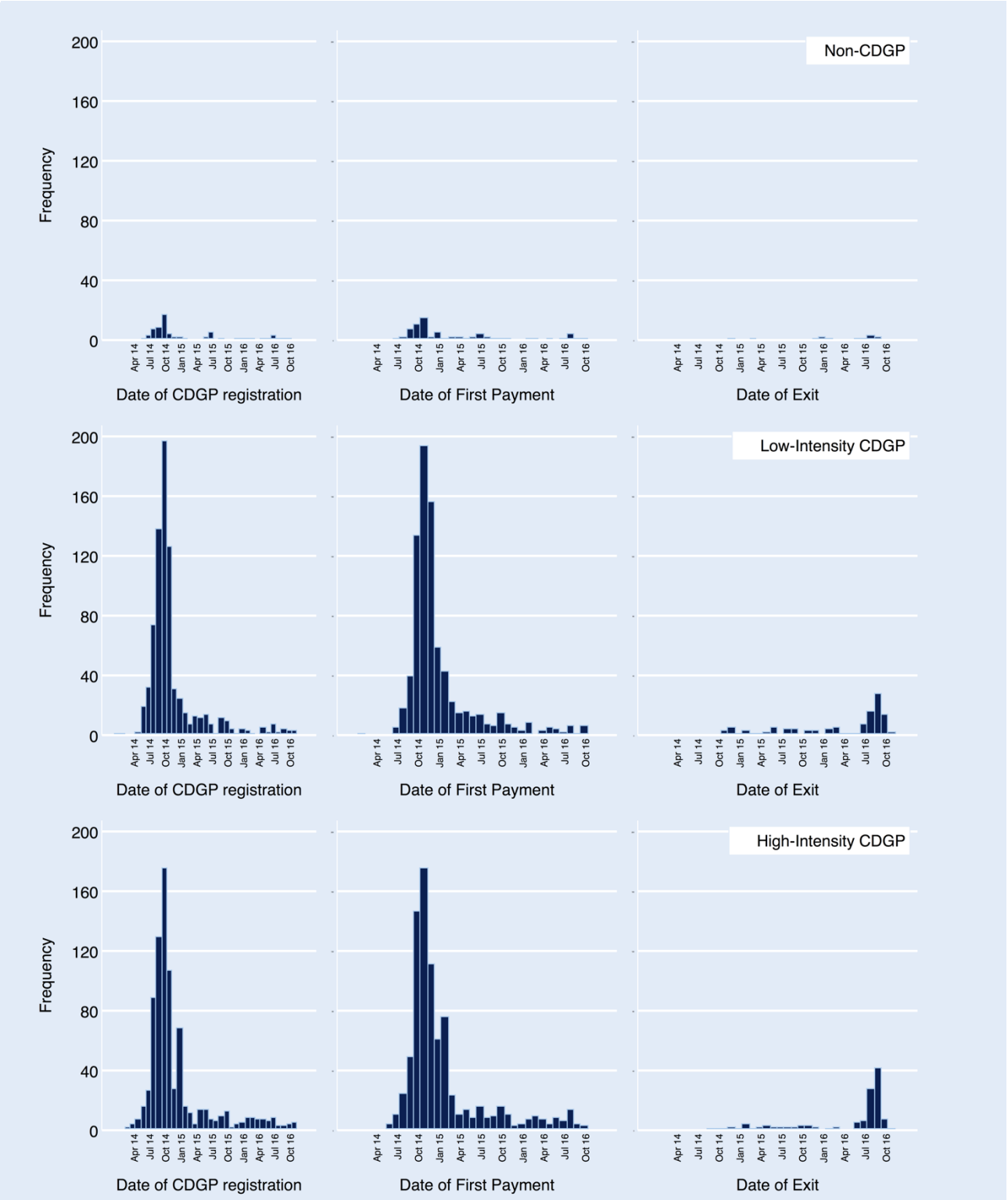
In non-CDGP communities, it is also common to find households who report having received such messages, although the likelihood of receiving a message through any given channel is always higher in CDGP communities.

4.1 Roll-out of CDGP interventions

We start by providing evidence on the timing of the programme in the communities we surveyed. Figure 12 shows time patterns of entry and exit from the cash transfer component of the programme. The three panels on each row show month of registration (when the beneficiary woman's details are collected and stored), month of first payment, and month of exit[14], all three as reported by the women interviewed at midline. The original aim was to roll out the cash component right after the baseline round of data collection (see Volume II of this report). However, the process evaluation has documented how beneficiary registration and payments roll-out has been slower than expected, due to logistical challenges in reaching communities and procuring necessary equipment (Sharp, Visram, Bahety, & Kardan, 2016). This is consistent with Table 3, where we observe many beneficiaries who were identified as pregnant at baseline (October 2014) still being registered through January 2015. Nevertheless, most payments start around October 2014 and end around two years later. This pattern is repeated in both high- and low-intensity BCC communities.

[14] Exit from the programme can happen because the maximum number of payments has been disbursed, or because of intervening events (e.g. stillbirth, death of the child, relocation or fraud) (see Sharp, Visram, Bahety and Kardan, 2016). In the household questionnaire, 370 respondents (14% of the women ever enrolled) report having left the programme. Among these, the main reasons cited are death of the child (38%), having graduated from the programme (30%), and miscarriage or stillbirth (15%).

Figure 12: Date of CDGP registration, first payment and exit



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Each bar corresponds to a month, and the height represents the number of women who report having registered, received the first CDGP payment, and exited the programme in that month.

4.2 Knowledge about the CDGP and access to the CDGP payments

In this section we look at the proportion of women who were pregnant at baseline who ended up receiving the cash transfer from the CDGP. This is important because, as discussed in Section 2.2, all estimates of the effect of the CDGP are found by comparing the outcomes of women who were pregnant at baseline residing in CDGP communities to women who were pregnant at baseline residing in non-CDGP communities, *regardless of whether they actually received the programme or not*. If only a small proportion of women ended up getting cash payments then our estimates of the impact of the CDGP will provide underestimates of the effect of the programme.

In terms of the CDGP and access to payments, we see from Table 2 that knowledge of the programme is widespread in CDGP communities. Over 95% of women report knowledge of the programme in both kinds of CDGP community (with slightly higher knowledge of the programme in high-intensity BCC communities). This confirms findings in the qualitative study (Sharp & Cornelius, 2017, p. 18 ff.), where it was found that local authorities (such as community volunteers (CVs) or religious and traditional leaders) are effective at promoting awareness of the intervention.

Participation rates into the programme are also very high: around 84% of women who were pregnant during the baseline in both low- and high-intensity CDGP communities ended up participating in the programme. Possible reasons why the remaining 16% of women pregnant at baseline did not end up enrolling in CDGP include the women misreporting their pregnancy to baseline field teams, they miscarried or gave birth between the baseline and CDGP registration or they did not want to participate. Also, the qualitative midline suggests some women who want to participate have been unable to register, due to delays in the implementation processes and/or demand outstripping the programme's capacity.

Around 7% of women who were pregnant at baseline in non-CDGP communities ended up receiving payments from the CDGP. There could be various reasons behind this finding. One phenomenon that is documented in the process evaluation (Sharp, Visram, Bahety, & Kardan, 2016, p. 29 ff.) and in the qualitative midline (Sharp & Cornelius, 2017, p. 23 ff.) is 'cross-border registration'. In some cases, the substantial size of the grant might have induced some women living in non-CDGP communities to declare being resident in CDGP villages to access the grant. These would then be interviewed at midline in their actual residence community.[15] Another possible reason could be the programme being rolled out in the wrong communities by error.

Finally, we note that awareness of the CDGP is similarly reported by men and women.

Table 2: Programme participation

	Midline						
	Non-CDGP		Low intensity		High intensity		High–low diff.
	N	Mean	N	Mean	N	Mean	Mean†
WOMEN							
Do you know of any programme operating in this village that gives regular payments of cash to pregnant women or women with young children, or their families? (%)							
Yes, there is such a programme in this community	1009	24	1026	95	1083	99	0.041*
No, there is no such programme in this community	1009	75	1026	4.7	1083	0.5	-0.042*
Do not know if there is such a programme in this community	1009	0.9	1026	0.0	1083	0.1	0.001

[15] We find evidence for this in our own data. Women in non-CDGP communities that are less than 1 km away from the nearest CDGP community are four times more likely to have participated in the programme than those further away.

	Midline						
	Non-CDGP		Low intensity		High intensity		High–low diff.
	N	Mean	N	Mean	N	Mean	Mean†
% of women who recognise CDGP by name	1009	3.6	1026	32	1083	37	0.056
% of women who have ever been recipients of CDGP	1009	7.2	1026	84	1083	84	0.763***
% of women who ever received payments (if have been recipients)	73	99	858	99	904	99	-0.006
% of women who are still CDGP recipients at time of midline interview (if ever have been recipients)	73	81	858	85	904	85	0.000
MEN							
Do you know of any programme operating in this village that gives regular payments of cash to pregnant women or women with young children, or their families?							
Yes, there is such a programme in this community	621	24	642	95	675	99	0.040*
No, there is no such programme in this community	621	75	642	5.1	675	0.9	-0.043*
Do not know if there is such a programme in this community	621	1.8	642	0.2	675	0.4	0.003
% of men who recognise CDGP by name	621	2.6	642	26	675	25	-0.013
% of men who say the woman has ever received payments from CDGP	599	4.7	613	81	654	82	0.010

Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean.
3. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
4. Means and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The High–low diff. is estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 3 shows participation rates into the CDGP split by state. On the whole, participation rates are always higher for Jigawa than Zamfara, for both high- and low-intensity communities. In Jigawa, 93% of the women who were pregnant at baseline end up receiving cash transfers from the CDGP, whereas in Zamfara it was only 76%. In Section 4.6 below we also look at the proportion of women pregnant at baseline in each state who were exposed to BCC activities. We again find that a higher proportion of women in Jigawa were exposed to BCC as compared with women in Zamfara.

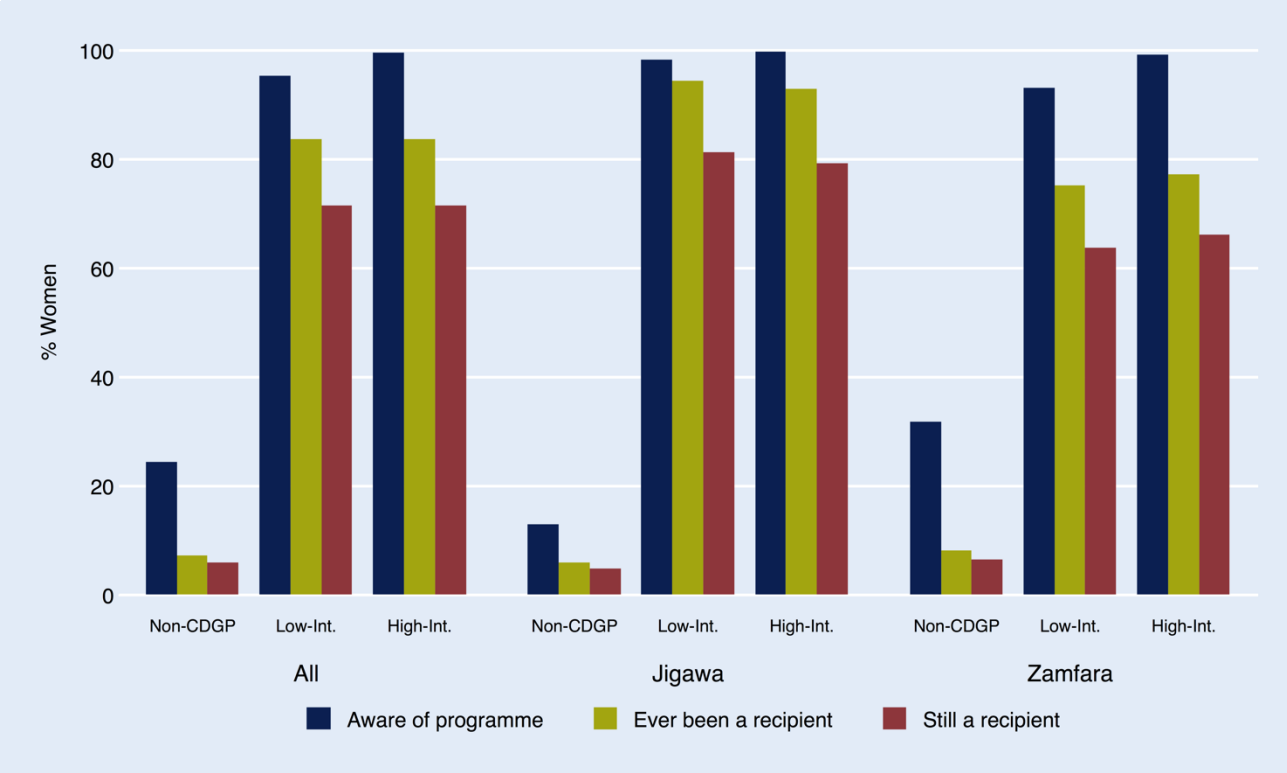
Table 3: Programme participation among women, by state

	Midline						
	No CDGP		Low intensity		High intensity		High–low diff.
	N	Mean	N	Mean (SD)	N	Mean (SD)	Mean†
% of women aware of CDGP operating in the community							
Overall	1009	24.4%	1026	95.3%	1083	99.4%	0.041*
Jigawa	394	12.9%	457	98.2%	438	99.8%	0.016
Zamfara	615	31.7%	569	93.0%	645	99.2%	0.062
% of women who have ever been recipients of CDGP							
Overall	1009	7.2	1026	83.6	1083	83.6	-0.001
Jigawa	394	5.8	457	94.3	438	92.9	-0.014
Zamfara	615	8.1	569	75.0	645	77.2	0.022
% of women who are still CDGP recipients at time of midline interview (if ever have been recipients)							
Overall	73	80.8%	858	85.4%	904	85.4%	0.000

	Midline						
	No CDGP		Low intensity		High intensity		High–low diff.
	N	Mean	N	Mean (SD)	N	Mean (SD)	Mean†
Jigawa	23	82.6%	431	86.1%	407	85.3%	-0.008
Zamfara	23	82.6%	431	86.1%	407	85.3%	-0.008

Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean.
3. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
4. Means and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The High–low diff. is estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%)

Figure 13: Programme participation among women



Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bar represents the unweighted percentage of women who are aware of the programme, have ever been recipients, and are still recipients, in each of the non-CDGP, low-intensity BCC, and high-intensity BCC groups.

In Volume II we report more detailed statistics related to knowledge of specific details of the programme, including on the amount and frequency of payments. We also provide further statistics related to ease of access to payments and the travel times involved in accessing payments.

4.3 Timing of CDGP payments

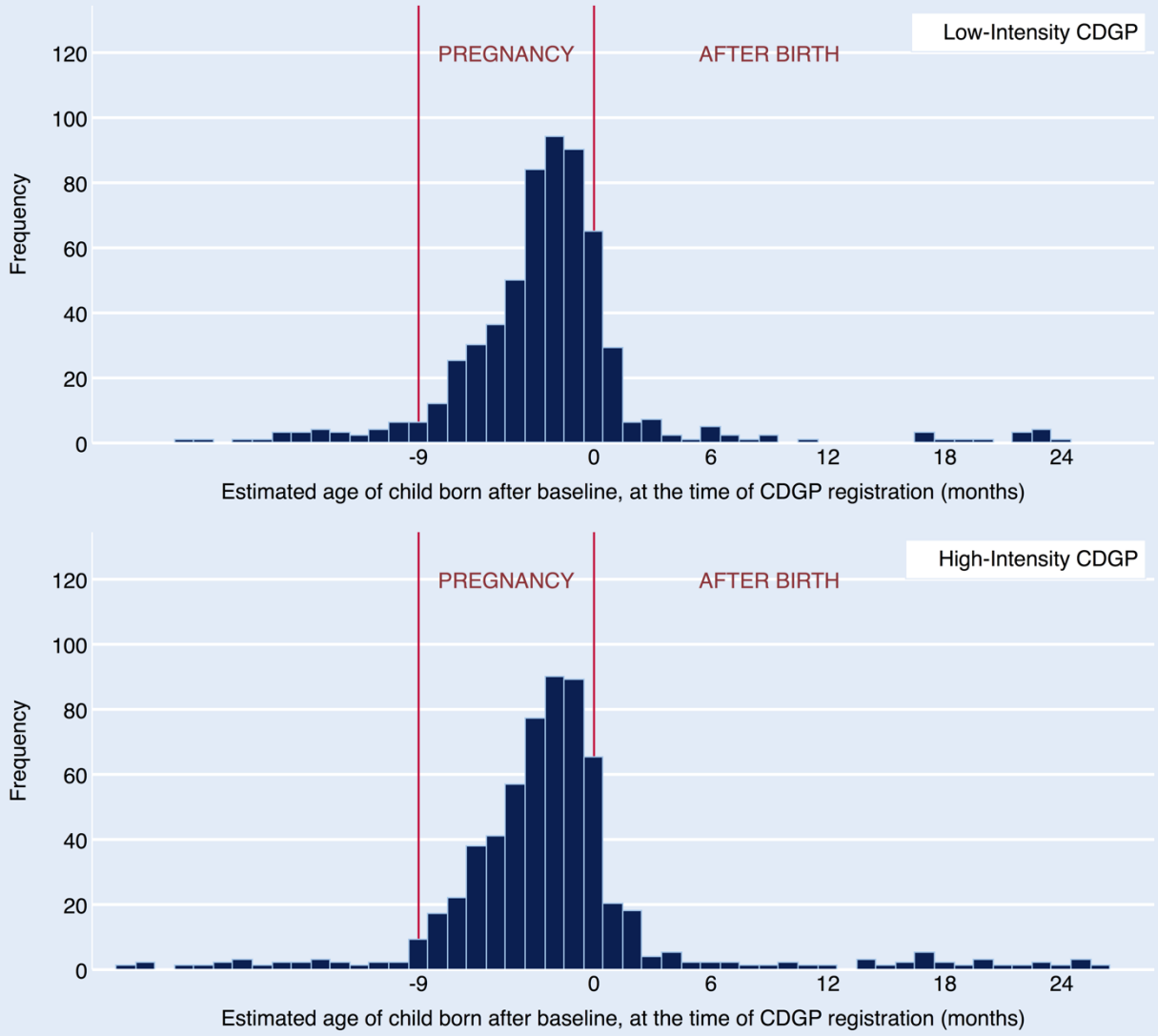
In this section we look at the timing that women received CDGP payments. The programme intended to target the first 1,000 days of life and thus payments were intended to begin soon after conception. Therefore, eligibility for the CDGP payment formally starts as soon as pregnancy can be documented. A question of prime interest is thus whether mothers were effectively able to receive the payments during pregnancy or could access them only after the child was born, in light of the delays observed in some aspects of programme roll-out (Sharp, Visram, Bahety, & Kardan, 2016).

In order to understand at what stage of pregnancy women were enrolled into the CDGP, we consider the age in months of the unborn child at the time of registration. Figure 14 shows the age of the newborn children at the time of mothers' registration with CDGP, where 0 is the time of delivery. If a mother was enrolled five months before delivery then the age of child at registration would be -5 months. We see that the majority of mothers are registered by the time of birth of their child (time 0), and that there are no significant differences in this timing between the low- and high-intensity BCC communities. On average, mothers started receiving the grant around the 7th month of pregnancy.

Some of the delay in registration we observe might have reportedly arisen from the process of pregnancy verification. Procedures for establishing pregnancy status have been found to be sometimes inconsistent across locations, in some cases requiring blood tests at the local clinic or even visible evidence of pregnancy instead of a urine test only, in efforts to reduce fraudulent enrolment and cope with large demand (Sharp & Cornelius, 2017, p. 21 ff.). This even led some women to delay their attempts at registration until their pregnancy was very advanced.

It must be noted that the sample of women considered here, who were pregnant at baseline, were registered very early in the rollout of CDGP. Delays in registration have substantially decreased since. For the sample of women who were not pregnant at baseline but became pregnant after the baseline survey, the first CDGP payment is disbursed on average at the 5th month.

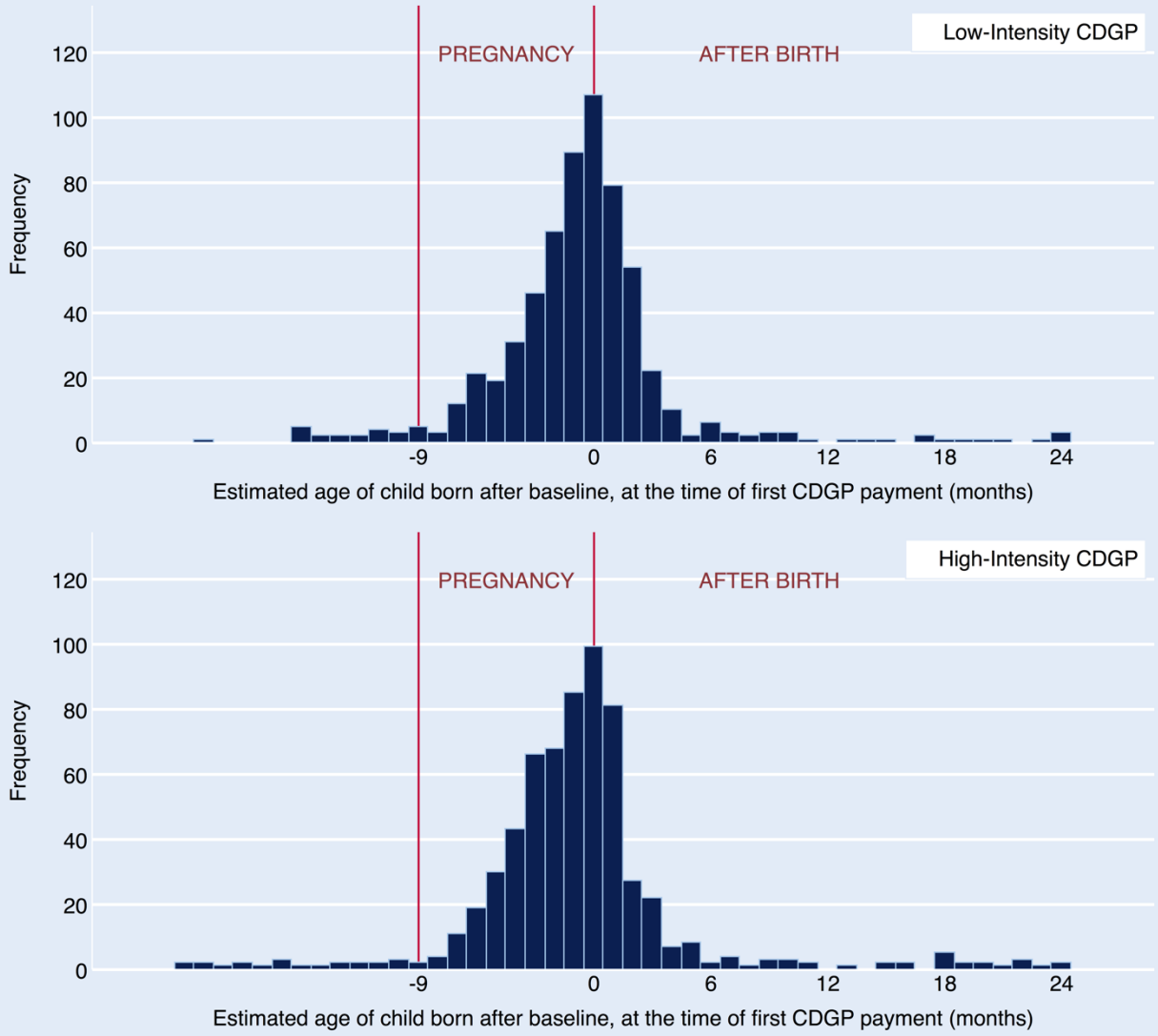
Figure 14: Timing of CDGP registration



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people. Additionally, here we consider only mothers who gave birth to a single child between baseline and midline.
2. The age is calculated in the following way. We consider the month when the woman reports having registered for the CDGP, and the month of birth of the child born after the baseline that we survey. We calculate the difference in months between these two dates. This can be interpreted as the estimated age of the child at the time in which the mother started participating in the programme, which includes the pregnancy period.
3. Each bar corresponds to a month of age, and the height represents the number of children whose mothers report having registered for the CDGP in the month corresponding to that age.
4. The vertical red lines show the pregnancy period, from -9 months (estimated start of pregnancy) to 0 months (birth). Values larger than zero indicate the period after birth. Extreme values are attributable to measurement error in dates.

Figure 15: Timing of first CDGP payment



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people. Additionally, here we consider only mothers who gave birth to a single child between baseline and midline.
2. The age is calculated in the following way. We consider the month when the woman reports having received the first CDGP payment, and the month of birth of the child born after the baseline that we survey. We calculate the difference in months between these two dates. This can be interpreted as the estimated age of the child at the time in which the mother started participating in the programme, which includes the pregnancy period.
3. Each bar corresponds to a month of age, and the height represents the number of children whose mothers report having registered for the CDGP in the month corresponding to that age.
4. The vertical red lines show the pregnancy period, from -9 months (estimated start of pregnancy) to 0 months (birth). Values larger than zero indicate the period after birth. Extreme values are attributable to measurement error in dates.

Figure 15 shows, for women that were pregnant at baseline, the age of their child when they first started received CDGP payments. First payments are made after registration.[16] The two panels then show the distribution of age at first payment in non-CDGP communities, in CDGP communities with low intensity, and those with high-intensity BCC. In both types of CDGP

[16] Theoretically, we can calculate this age in two ways: (i) by comparing the date of birth as recorded in the midline household data, with the date of first recorded payment; or (ii) inferring the date of birth from the number of months the woman reported being pregnant in the baseline household survey, and again comparing this with the date of first payment. For the remaining figures, we focus on using the age of the child as defined using the midline household survey, since we believe this to be more precise. However, note that the conclusions do not change when using the alternative source of information.

communities the age of the child at first payment is significantly higher than expected from the dates of registration. An average of 1.7 months is reported between registration and first payment, with a median of one month. We see a spike and mass of first payments being made close to the zero months age of children, or during the final trimester of pregnancy. This means that the stage of pregnancy when payments started varied for different women, with some receiving the payment early in pregnancy, the bulk of women receiving their first payment around the time of delivery, and some only receiving their first payment after delivery.

This pattern is again consistent with findings from the qualitative midline and the process evaluation, where the implementation of the transfers is shown to have incurred some delays (Sharp, Visram, Bahety, & Kardan, 2016). In the midline interview, we asked women for the month when their details were first collected by CDGP staff, i.e. what is referred to in the process evaluation as ‘offline registration’. Before the payments can be disbursed, women must go through ‘online registration’, when biometrics are collected (photo and thumb print) and a mobile phone is given to them. The process evaluation report has documented challenges with this phase, in terms of both biometrics (i.e. shortage and breakdown of tablets, no power source for charging in the communities, and short battery life) and procurement of the mobile phones. This might help explain part of the observed discrepancy between age at registration and at first payment.

There is clearly some measurement error in ages using both methods (see Volume II Section 9.6 for more details on how we measured the age of children), with some payments being inferred to be received prior to pregnancy or others starting well after pregnancy has come to term.

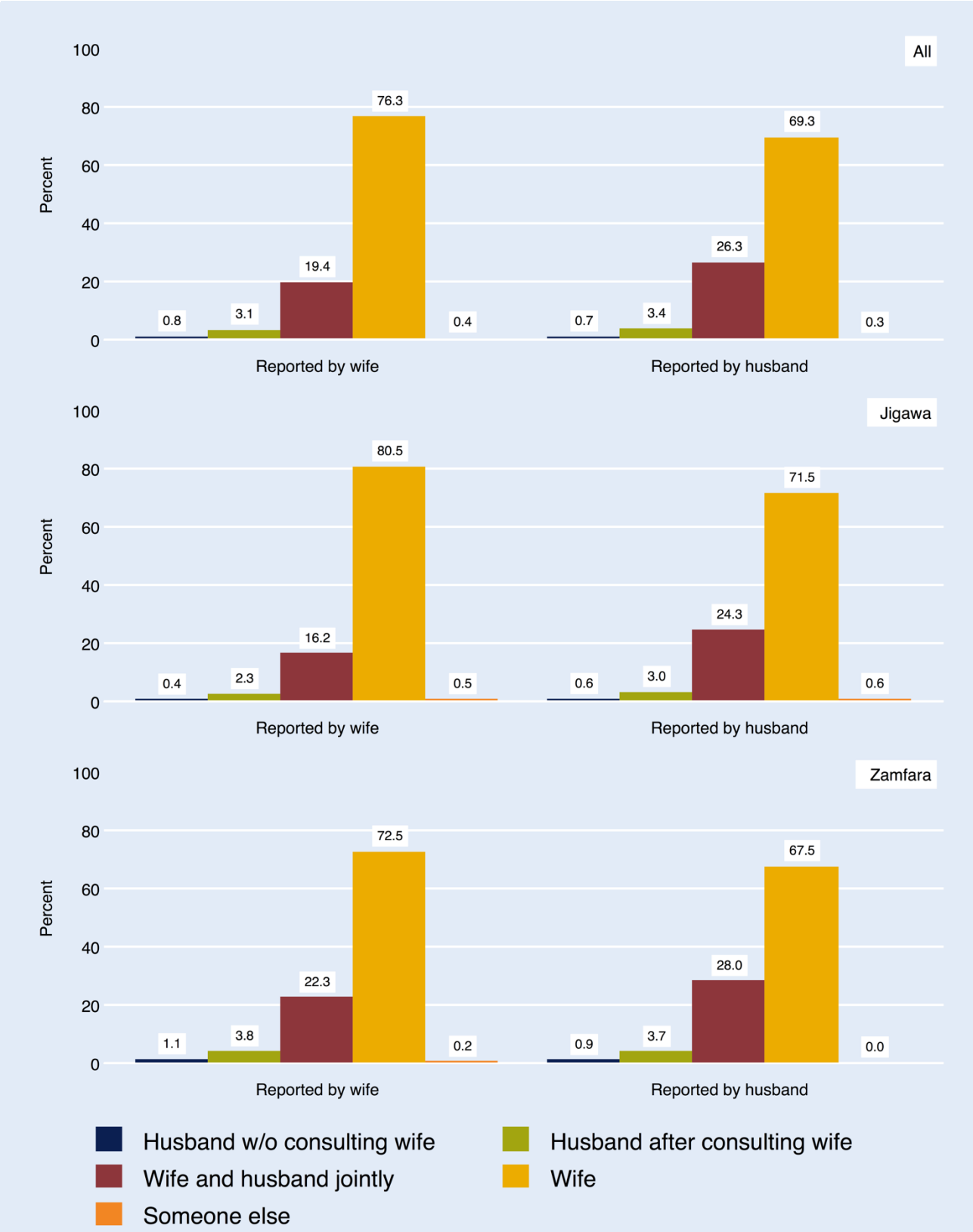
4.4 Control over the CDGP cash transfer

In this section we consider who decides how the cash transfer is used and Figure 16 provides a sense of who in the household has control over payments received from the CDGP. This was asked to both women and their husbands in the surveyed households, to enable a comparison. In the majority of households, women are reported to have control regardless of whether the man or the woman is asked. This is the case across both states.

Figure 17 shows the same figures, but separated by whether the woman is in a monogamous or polygamous marriage. Women in polygamous households are somewhat more likely to have full control of the grant.

This finding closely mirrors the qualitative evidence on the CDGP: the fact that the woman is the primary beneficiary and is entitled to choose how to spend the grant seems to be widely accepted, including among men in the household (Sharp & Cornelius, 2017, p. 44 ff.).

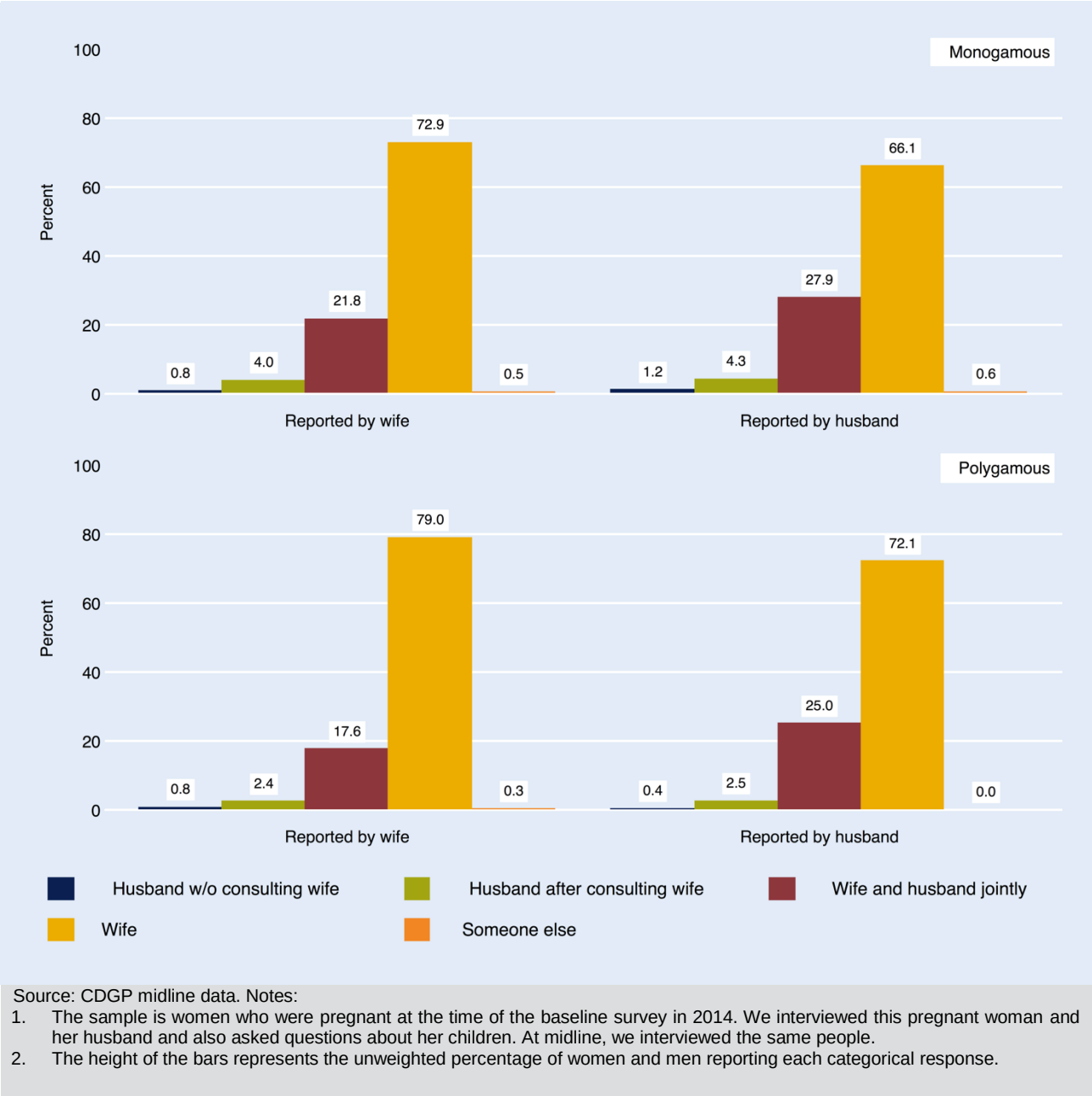
Figure 16: Who decides how to spend the CDGP payment



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men reporting each categorical response.

Figure 17: Who decides how to spend the CDGP payment, by marriage type

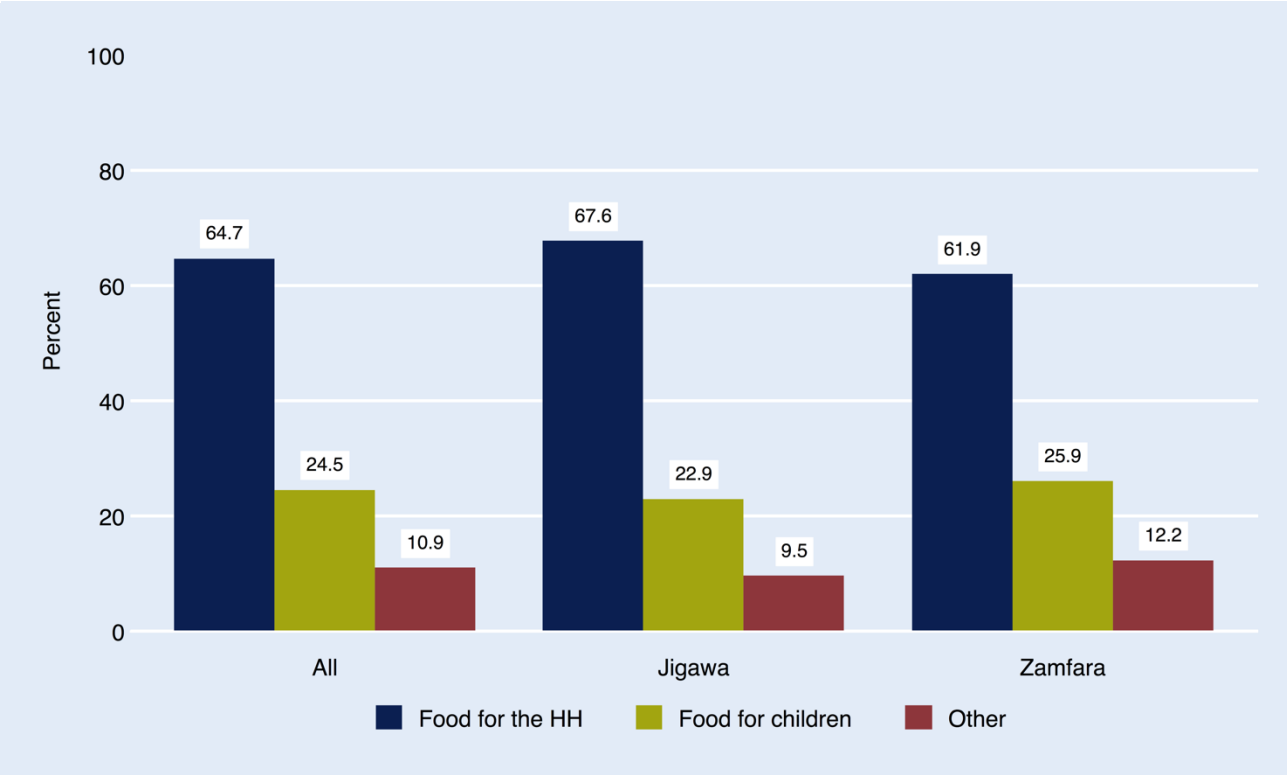


Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men reporting each categorical response.

4.5 Use of the transfer

In terms of what the CDGP transfer is reportedly spent on, both spouses report food (for the household in general, or for children in particular) as being the main use of the additional resources provided by the CDGP. Figure 18 shows the wife's report on what the grant is being spent on; the categories reported by the husband are substantially the same, and are presented in Volume II of this report.

Figure 18: What most of the CDGP payment is spent on (wife's report)

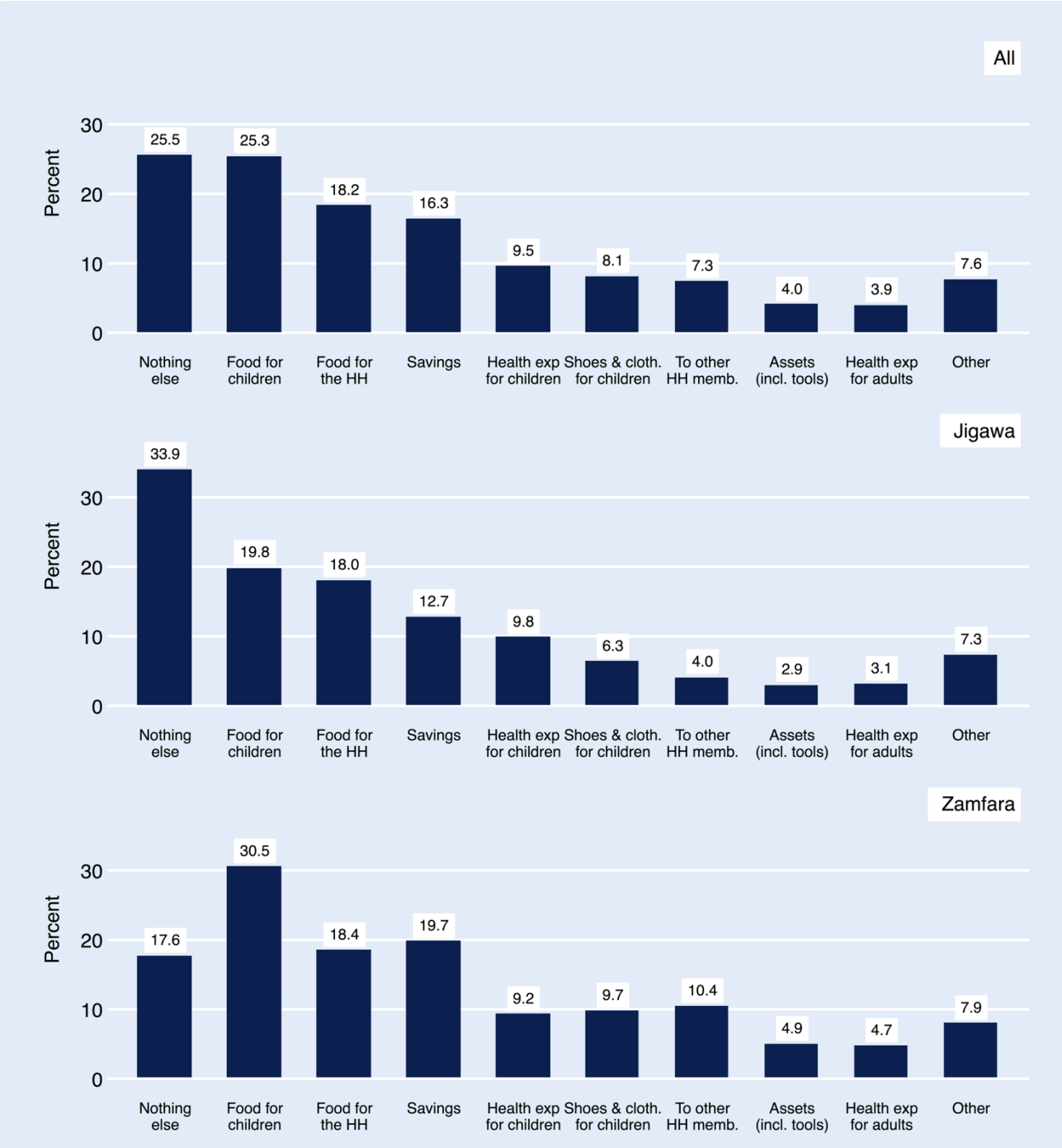


Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women reporting each categorical response.

In terms of other non-food items the CDGP payments are spent on, Figure 19 then shows that a good share of additional resources appears to be used for other child-related expenditures (such as on health and clothing). Again, results for husbands are very similar – see Volume II. We will see this again below when we examine in more detail the expenditure patterns of households in CDGP and non-CDGP communities.

This is very much consistent with the qualitative report, where women were found to cite food for the household as the main destination of the grant, with prominent other uses being health expenditures and clothing/shoes for children (Sharp & Cornelius, 2017, p. 46 ff.).

Figure 19: What else the CDGP payment is spent on (wife's report)



Source: CDGP midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men reporting each categorical response.
3. The categories reported may not sum to one since the original question allowed multiple choices.

4.6 Access to CDGP BCC activities

In addition to providing cash to women, the CDGP also provides nutrition advice, counselling and mentoring to support the feeding and nutrition practices of pregnant women, infants and young children.

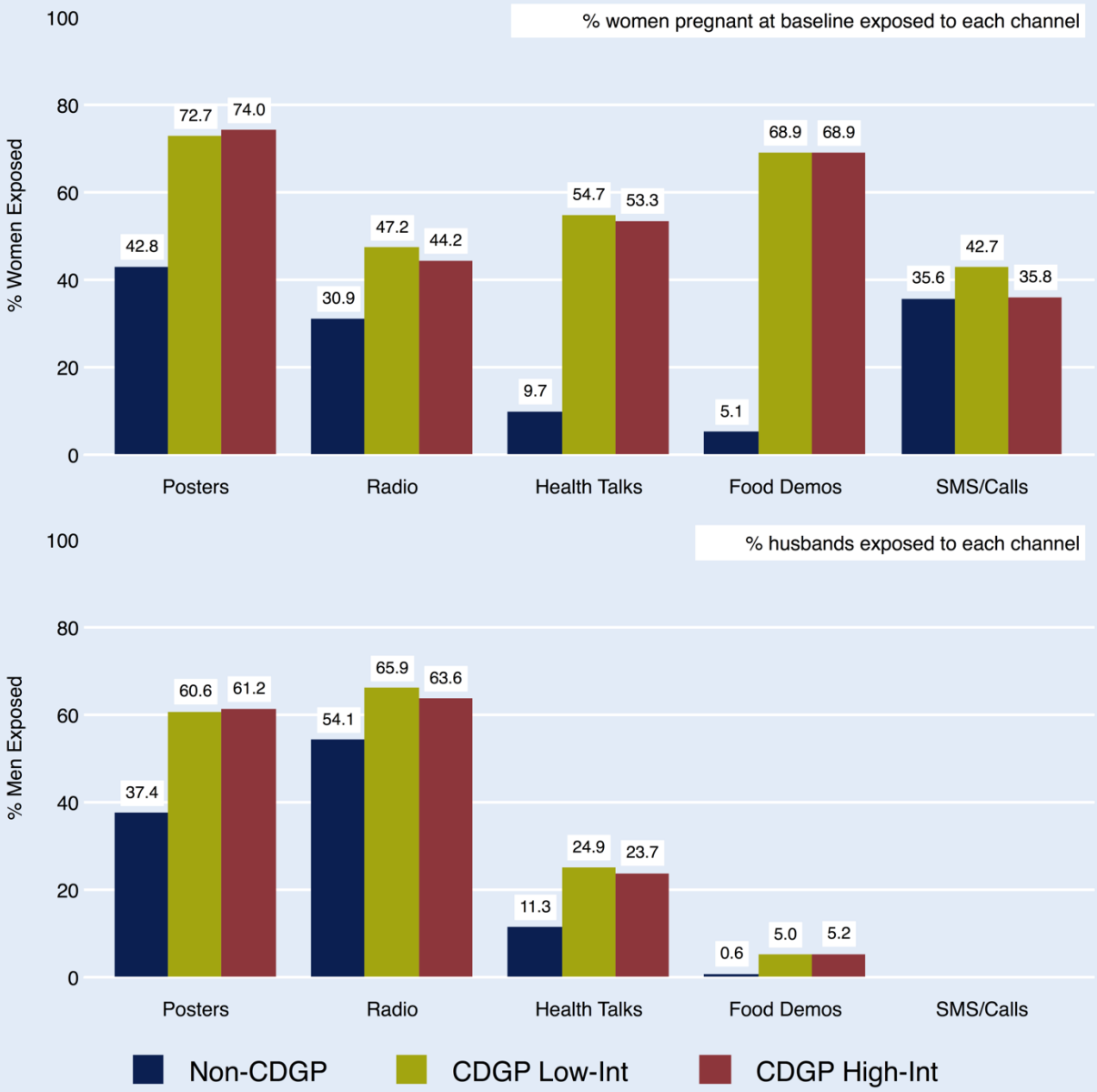
As discussed in Section 2.2, the CDGP communities were randomly split into two groups: the high-intensity BCC communities and low-intensity BCC communities. It was intended that the low-intensity BCC communities would receive advice, counselling and mentoring though posters, radio messaging, health talks, food demonstrations and SMSs/calls, while the high-intensity communities would receive the same as the low-intensity ones and additionally have access to small group sessions and one-to-one counselling from the CDGP-trained volunteers.

Figure 20 shows the channels through which BCC messages were received by households, for the low-intensity channels. We split responses by wives and husbands. The most frequent channel reported for information dissemination to women is posters, followed by food demonstrations.[17] For their husbands, the most frequent channels reported for information dissemination are the radio and posters. Women were far more likely to attend health talks or food demonstrations than their husbands.[18]

Many households in non-CDGP communities report receiving such messages, although the likelihood of receiving a message through any given channel is always higher in CDGP communities. This might indicate the presence of concurring information and advice programmes in non-CDGP areas. However, food demonstrations and health talks are only prevalent in the CDGP communities.

[17] The midline qualitative report also highlights the relative popularity of food demonstrations among BCC activities (Sharp & Cornelius, 2017, p. 29 ff.).
[18] Men were not asked about SMS and voice messages, since the CDGP mobile phone is meant to be used by women beneficiaries (Sharp & Cornelius, 2017).

Figure 20: Low-intensity BCC channels

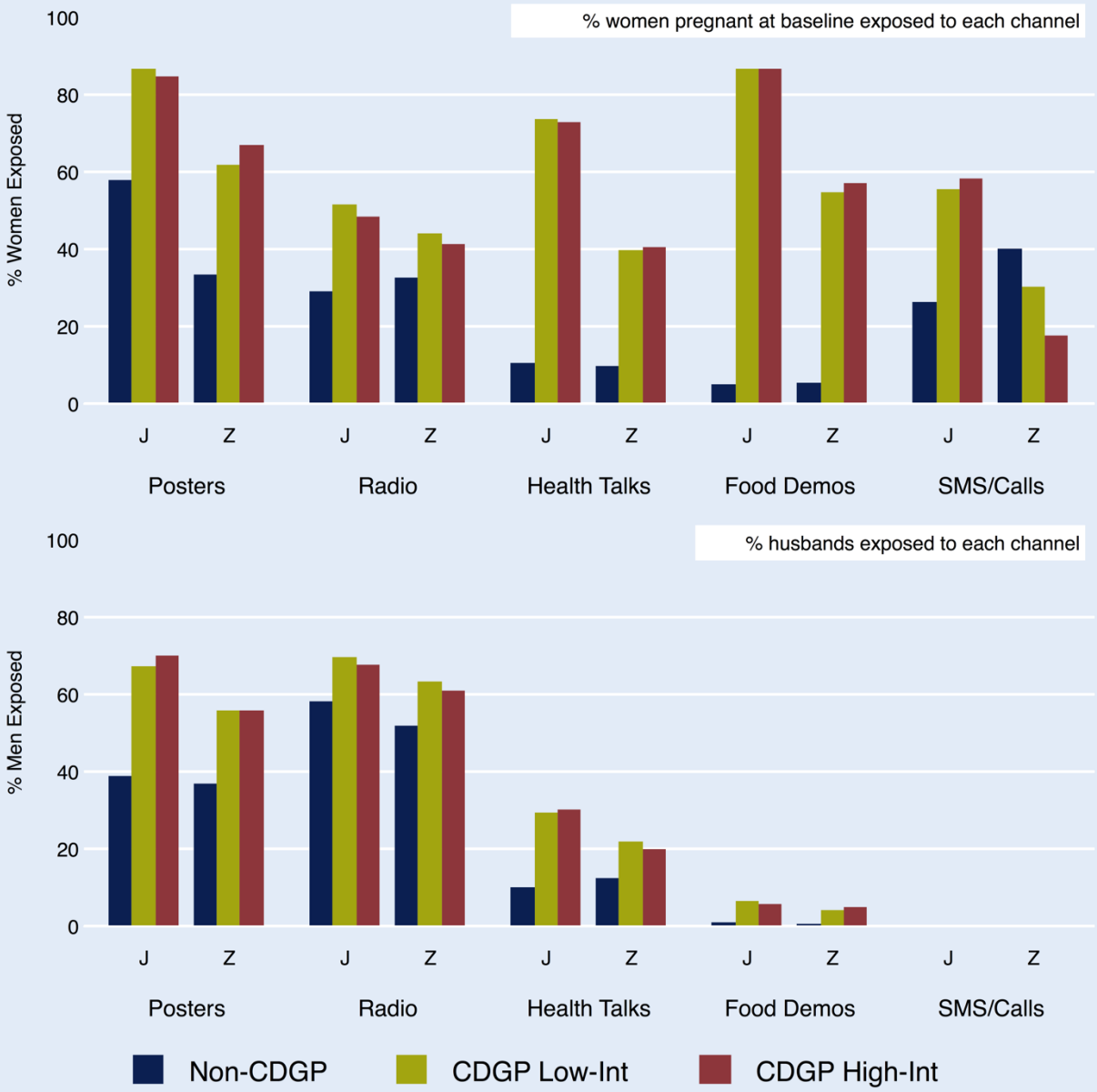


Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men who recall having been exposed to each of the low-intensity BCC channels.

The next figure shows the same information split by state. It shows a very similar pattern of channels of information transmission across states, although the BCC reached a larger proportion of people in Jigawa as compared with Zamfara (particularly women and particularly through the food demonstrations and health talks). This mirrors findings from the process evaluation, which details procurement and staffing issues in Zamfara that have reduced the implementation capability of health talks and food demonstrations (Sharp, Visram, Bahety, & Kardan, 2016, p. 46 ff.). In general, there seems to have been a certain degree of geographical and time variability in the implementation and frequency of low-intensity BCC activities, with some communities receiving BCC activities earlier or more often than others (Sharp & Cornelius, 2017).

Figure 21: Low-intensity BCC channels, by state



Source: CDGP midline data. Notes:

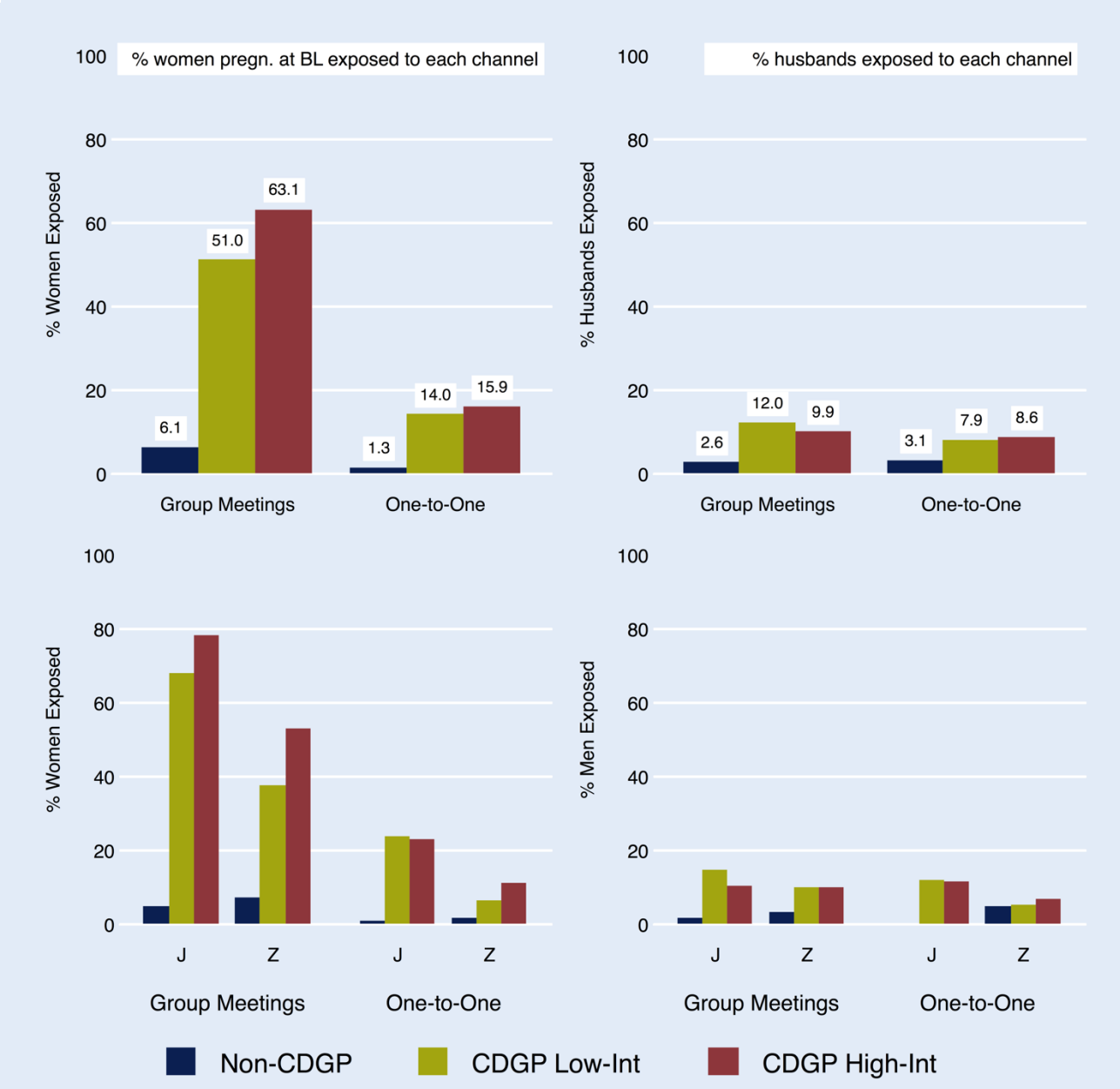
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men who recall having been exposed to each of the low-intensity BCC channels.

Next, we present evidence on the high-intensity BCC CDGP activities (namely small group meetings and one-to-one counselling), which were intended to only be implemented in the communities that were randomly selected for high-intensity BCC. Figure 22 shows that these channels of information transmission are far more frequently reported in CDGP communities relative to non-CDGP communities. The group meetings are the most frequently reported channel.[19] However, we do not see large differences between the high- and low-intensity CDGP

[19] There are questions about the ability of our questionnaire to correctly identify the prevalence of one-on-one meetings, since these activities are not always clearly separable from routine interactions women have with local CVs – 'home visits made by conscientious CVs following up on the group sessions, or simply giving extra advice in the course of neighbourly visits or while delivering information about payments or other programme business' (Sharp & Cornelius, 2017, p. 32).

communities in the frequency of these channels. Although for each channel we see that both men and women are more likely to report the high-frequency channel if they reside in a high-intensity BCC community, these differences are not very stark. This demonstrates that there were not large on-the-ground differences in how the low- and high-intensity BCC versions of the CDGP operated in practice. The midline qualitative report complements this evidence, finding no systematic difference between the two types of community (Sharp & Cornelius, 2017, p. iv ff.). **As a result, most of our evaluation findings will pool the evidence from high- and low-intensity BCC CDGP communities,** although we do highlight any notable differences in impact across these two types of CDGP community where appropriate.

Figure 22: High-intensity BCC channels



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women and men who recall having been exposed to each of the high-intensity BCC channels.

As with the low-intensity BCC activities, women in Jigawa were more likely to have been exposed to BCC than women in Zamfara.

4.7 Recall of BCC key messages

The key messages that the BCC was intended to communicate are shown in the box below.

Box 3: Key BCC messages

KM1: EXCLUSIVE BREASTFEEDING

Breastfeed child exclusively until child is six months old. Do not give water, tinned milk or any other food.

KM2: BREASTFEED IMMEDIATELY AFTER GIVING BIRTH

Start breastfeeding your baby within the first 30 minutes after delivery

KM3: COMPLEMENTARY FOODS AND BREASTFEEDING

Introduce complementary foods at six months of age while continuing to breastfeed. Breastfeed on demand and continue until two years of age.

KM4: HYGIENE AND SANITATION

Wash your hands after going to the toilet, cleaning baby who defecated, before and after feeding baby; wash baby's hands and face before feeding baby

KM5: USE HEALTH FACILITIES

Take baby to health facility if you notice any of the following: fever, convulsion, refusing to eat, malnutrition or diarrhoea

KM6: ATTEND ANTENATAL CARE (ANC)

KM7: EAT ONE ADDITIONAL MEAL DURING PREGNANCY

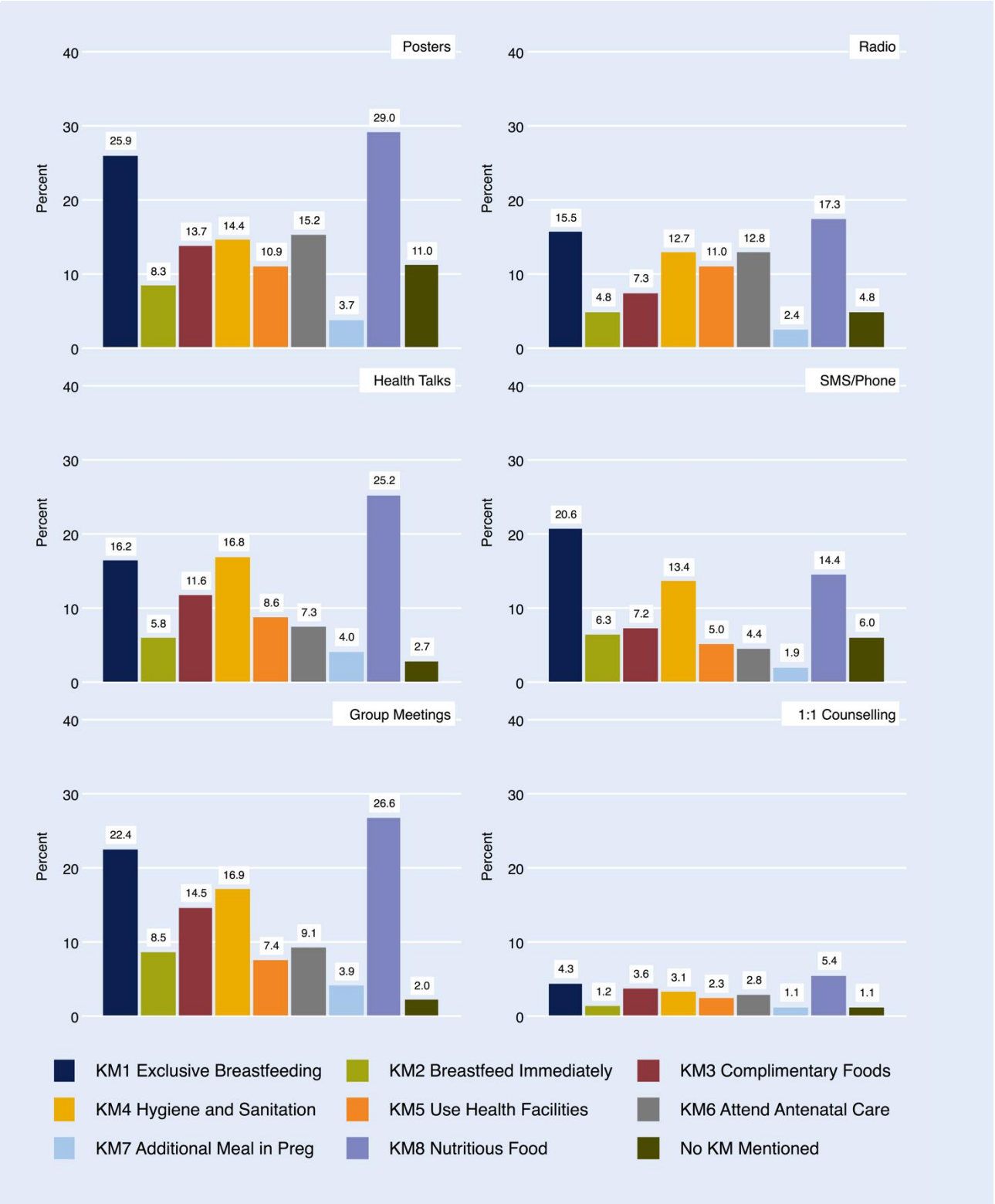
KM8: NUTRITIOUS FOOD

Ensure you buy nutritious foods when you are buying food for your family

In terms of women's recall of specific messages received from the BCC component of the CDGP, the following figure summarises what messages were recalled, by channel. Messages related to exclusive breastfeeding and eating nutritious foods were prominent across all channels. Figure 24 then reveals that, for men, there is a more uniform recall of various messages for any given channel.

In Volume II we provide more detailed breakdowns on the kind and frequency of messages received through each transmission channel.

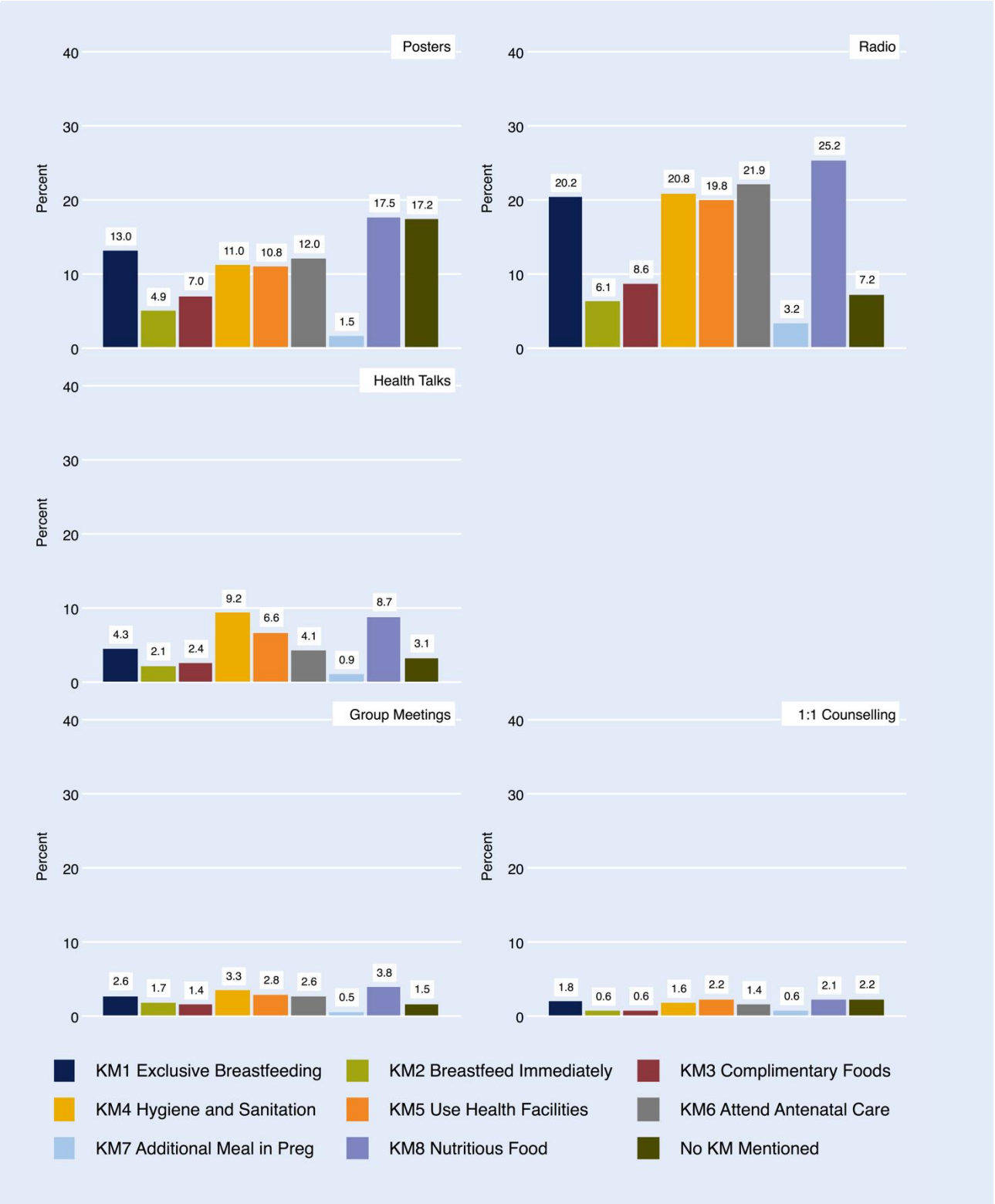
Figure 23: BCC key messages, reported by wife



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of women who recall having received each of the key messages through any of the BCC channels. It is based on the sample of all subjects interviewed, including those that do not report being exposed to each BCC channel.

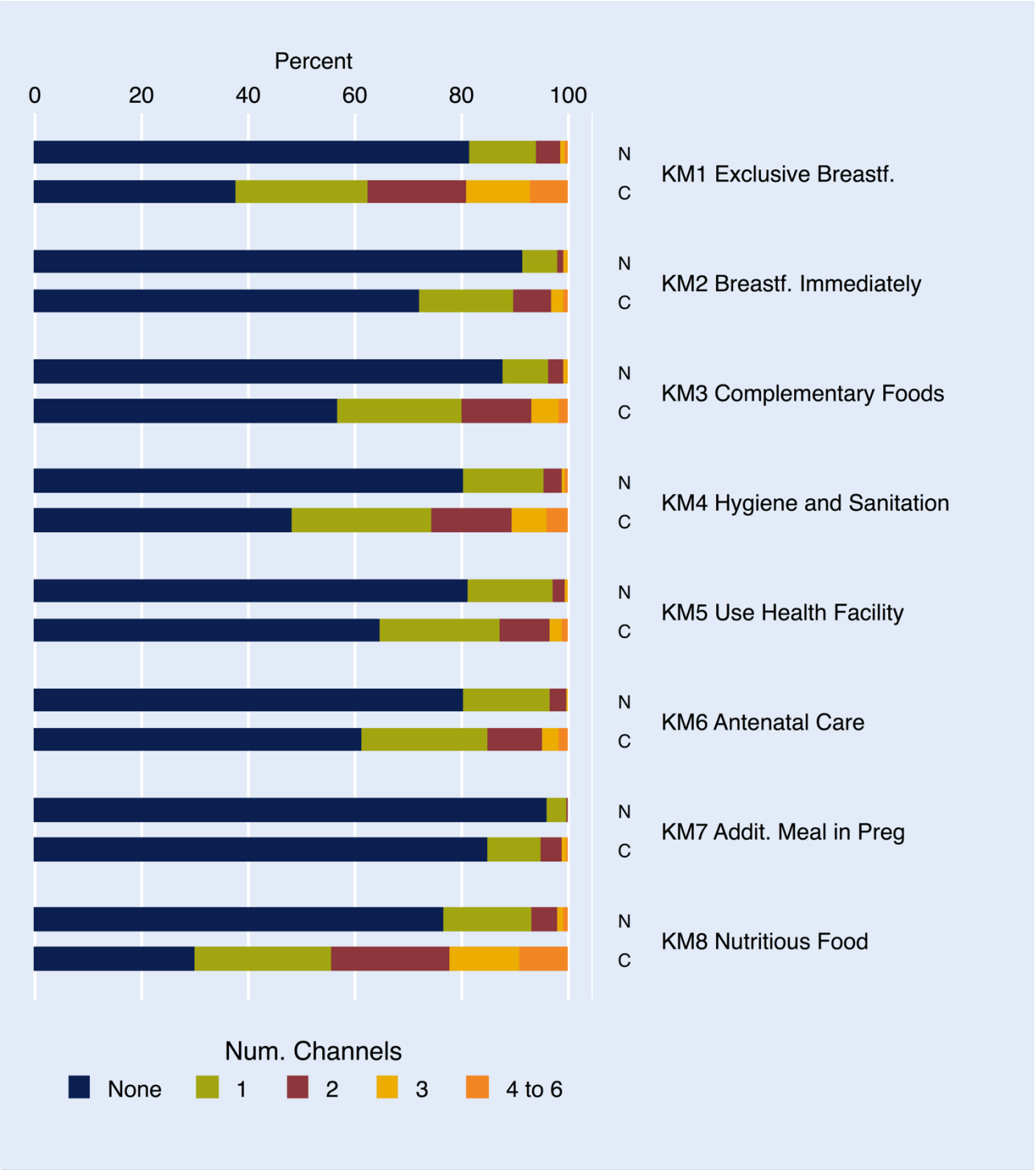
Figure 24: BCC key messages, reported by husband



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The height of the bars represents the unweighted percentage of men who recall having received each of the key messages through any of the BCC channels. It is based on the sample of all subjects interviewed, including those that do not report being exposed to each BCC channel.

Figure 25: Key messages across all channels, reported by wife



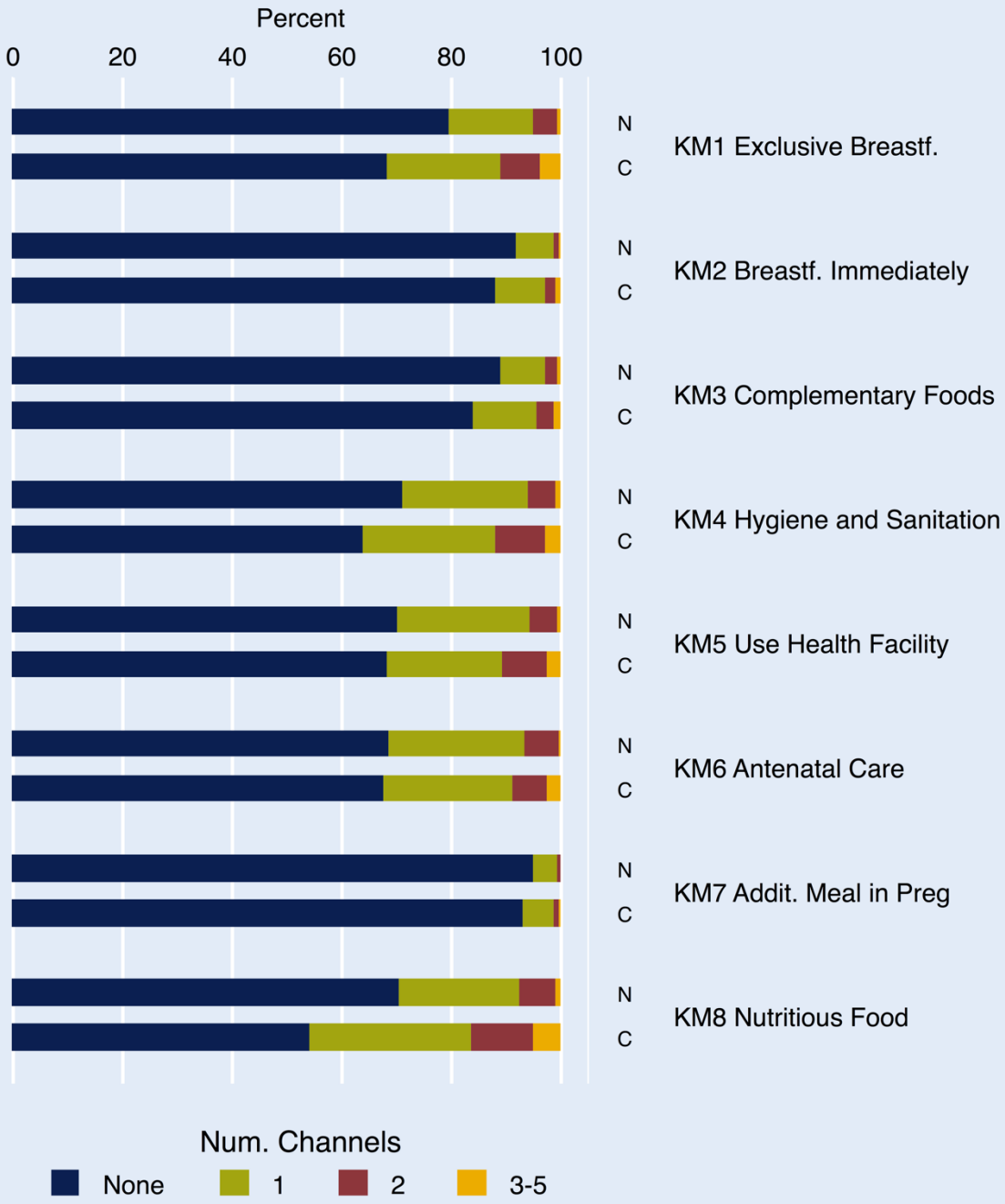
Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Each pair of horizontal bars represents exposure to one of the eight key messages from the BCC component of CDGP, in non-CDGP (N) and CDGP (C) areas respectively.
3. Areas of different colours correspond to fractions of respondents who have been exposed to different numbers of channels, e.g. the width of the blue bar represents the percentage of respondents who report having not been exposed to the message via any channel.

Collating messages across all channels, we see in Figure 25 that, for each type of message, many are received through multiple channels and this is especially the case in CDGP communities. Again we see that messages related to exclusive breastfeeding and eating nutritious foods were

prominent, which is consistent with the qualitative midline findings. Figure 26 reports a similar pattern of multiple channels per message type being reported by men.

Figure 26: Key messages across all channels, reported by husband



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Each pair of horizontal bars represents exposure to one of the eight key messages from the BCC component of CDGP, in non-CDGP (N) and CDGP (C) areas respectively.
3. Areas of different colours correspond to fractions of respondents who have been exposed to different numbers of channels, e.g. the width of the blue bar represents the percentage of respondents who report having not been exposed to the message via any channel.

5 Impact of the CDGP on household income and livelihoods

Key findings

Women in CDGP areas are around 6 percentage points more likely to engage in any work activities than women in non-CDGP areas. This translates into **an increase in average women's earnings, of around 20% of the baseline level**. We do not find a corresponding impact on whether men engage in any work activities (since nearly all men do anyway), or in men's average income. Overall we also do not find any impact of CDGP on average household earnings, combining the incomes of husband and wife. This is because wife's incomes are on average much smaller than husband's incomes, so increase in women's earnings is not large enough to cause a statistically significant difference between CDGP and non-CDGP communities in overall household earnings. **However once the value of CDGP transfers is included in the measure of income then, unsurprisingly, we do find a large and significant difference in average overall incomes between CDGP and non-CDGP areas**. The magnitude of this increase is considerable, amounting to 25% increase in average earnings over the baseline level, which is an increase worth more than the total level of female average earnings at baseline.

The CDGP does not have a significant effect on the likelihood that either men or women cultivate land. There was also no effect on crop sales for men and only a very small effect for crop sales by their wives (and only very few women cultivate land). However we do find an impact of CDGP in the proportion of women that own animals (mainly chickens and goats). The magnitude of this impact is around 7% of the baseline level.

We find little change in whether households report having any savings, or having borrowed money in the last 12 months. However, we do see a reduction in the average *value* of loans that households in CDGP areas are themselves providing. There is no evidence of any change in the total savings of CDGP households, either in cash or in-kind.

5.1 Work activities

It is plausible that the CDGP transfers may enable households to increase their incomes by more than the value of the transfer, by enabling them to reallocate the time they spend engaged in work activities, invest more capital in local enterprises or raise their productivity whilst at work. Incomes could also increase through local economy effects because the CDGP increase the cash in the local economy, which could raise the demand for goods and services, thereby increasing local trade and stimulating employment (bar any inflationary effects).

Table 4 below shows some evidence of a change in women's work[20] activities in CDGP communities. In particular, we see that women are significantly more likely to be engaged in paid or unpaid work activities in CDGP locations relative to non-CDGP locations. The magnitude of this impact is to increase the likelihood of work for women by around 6 percentage points, or 8% of the baseline level. We see this translate into a significant increase in *average* women's earnings, of

[20] Women's work here is defined to be any paid or unpaid work activity other than housework and childcare.

around 20% of the baseline level.[21] This increase in women's work participation is consistent with the evaluation's qualitative results. Women report that the receipt of the grant has in some cases freed them from short-term concerns and relatively unprofitable activities, and enabled them to invest more time and resources into business, especially petty trading and preparation and sale of snacks (Sharp & Cornelius, 2017, p. vi).[22]

For men, there is no evidence that the CDGP impacts likelihood of working – a finding that is not surprising as almost all men work. We also see that husbands in CDGP communities earn more than those in non-CDGP communities, although the difference is not statistically significant. In the qualitative midline, many husbands stated that they are able to re-invest more of their own income and time in their activities – or toward new livelihood activities – now that the pressure of having to provide money to pay for food for the household is somewhat relieved. Additionally, some of the beneficiary women may give a proportion of their income to their husband for this purpose.

When we combine earnings across men and women, we do not find that the average total household earnings significantly increase. This is because wife's incomes are on average much smaller than husband's incomes, so increase in women's earnings is not large enough to cause a statistically significant difference between CDGP and non-CDGP communities in overall household earnings.

However once the value of CDGP payments is included in our measure of income, we do find evidence of a qualitatively large and statistically significant increase in average household earnings between CDGP communities and non-CDGP communities. The magnitude of this increase is noteworthy – accounting for a 25% increase in average earnings over the baseline level, and amounting to more than the total level of female average earnings at baseline. This also shows that the income effect that is larger than the transfer value by itself. This provides some support for the hypothesis that there is an income multiplier associated with the CDGP.

In Volume II, we provide more detail on the nature of work activities conducted by men and women, and their frequency. It's interesting to note that the programme has encouraged women to undertake petty trading (e.g. preparation of snacks and cooked foods), with a 5.5 percentage point increase in women engaged in this activity. At the same time, there seems to be a transition from unskilled to skilled jobs for husbands (potentially a shift from forms of casual labour seen as undesirable).

[21] The fact this impact exists for earnings but not log earnings (that drops zeros) highlights that most of this change is likely among those changing behaviour on the extensive margin, in line with the first row of Table 4 (rather than among those women with strictly positive earnings at both baseline and midline).

[22] We did not find that investments in business were a significant destination of the grant as part of the results in Section 4.5. This might be because we did not consider 'business' explicitly among the questionnaire options for possible uses of the grant. This might also be because using the transfer to meet food needs enables women to invest other resources in business, meaning business is not reported as a direct use of the cash transfer (as was found in the qualitative midline).

Table 4: Work activities

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Wife's report								
% of women with any paid or unpaid work in the past 12 months†	3687	71.4	1009	**76.6**	2109	**82.7**	**6.23*** **	-1.80
							(1.94)	(1.81)
Total monthly earnings, NGN††	3651	2512.2	1001	**3187.0**	2081	**3819.6**	**668.19*** **	229.50
		(4743.7)		(5145.9)		(5579.4)	(245.73)	(333.35)
Log total monthly earnings, NGN†††	1992	7.82	625	**8.02**	1469	**8.08**	0.07	**0.16** **
		(1.21)		(1.11)		(1.07)	(0.06)	(0.07)
Husband's report								
% of husbands with any paid or unpaid work in the past 12 months†	3686	93.9	1022	**99.6**	2116	**99.9**	0.26	-0.08
							(0.21)	(0.15)
Total monthly earnings, NGN††	3661	14073.9	1004	**18815.6**	2096	**20736.8**	1869.78	-2635.26
		(32187.9)		(38317.0)		(40499.1)	(1849.45)	(2168.90)
Log total monthly earnings, NGN†††	1646	9.65	500	**9.91**	1113	**9.95**	0.06	**-0.17***
		(1.35)		(1.23)		(1.22)	(0.08)	(0.09)
COMBINED								
Woman and husband monthly earnings, NGN+	3661	16543.0	1004	**21817.2**	2096	**24396.2**	2562.25	-2423.51
		(33147.3)		(38820.7)		(41247.6)	(1892.00)	(2286.97)
Woman and husband monthly earnings + CDGP grant, NGN++	3661	16543.0	1004	**22012.5**	2096	**26820.8**	**4807.25** **	-2339.20
		(33147.3)		(38806.2)		(41303.7)	(1898.75)	(2306.08)

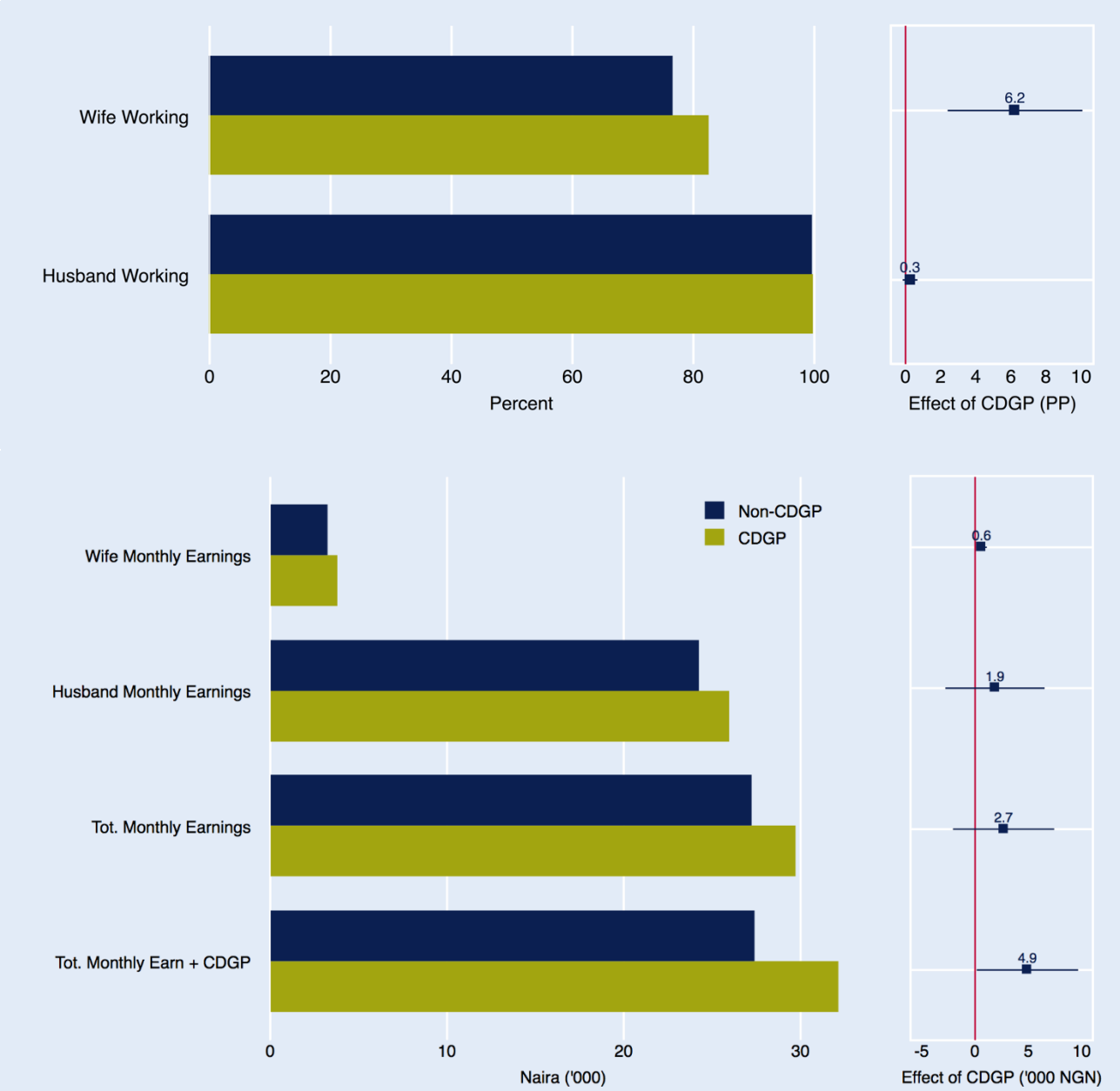
Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

†Excluding housework and childcare.
††Derived by summing earning across all work activities. Values above the 99th percentile are put to missing. This includes zeros for subjects who report no paid activities. Discrepancies in N with the above indicators are due to missing/don't know entries.
†††Derived by summing earning across all work activities. Values above the 99th percentile are put to missing. Subjects who report no paid activities have a missing value. Discrepancies in N with the above indicators are due to missing/don't know entries and zero earnings.
+Obtained by summing women's and men's earnings. Missing if man's earnings are missing.
++Obtained by adding the grant amount (NGN 3,500) to the total earnings, for those households where the woman says she is still participating in the CDGP.

Figure 27 shows some of the information from Table 4 in graphic form. This illustrates again that the total earnings of the household do significantly rise once the value of the CDGP payments are included.

Figure 27: Effect of the CDGP on work and earnings



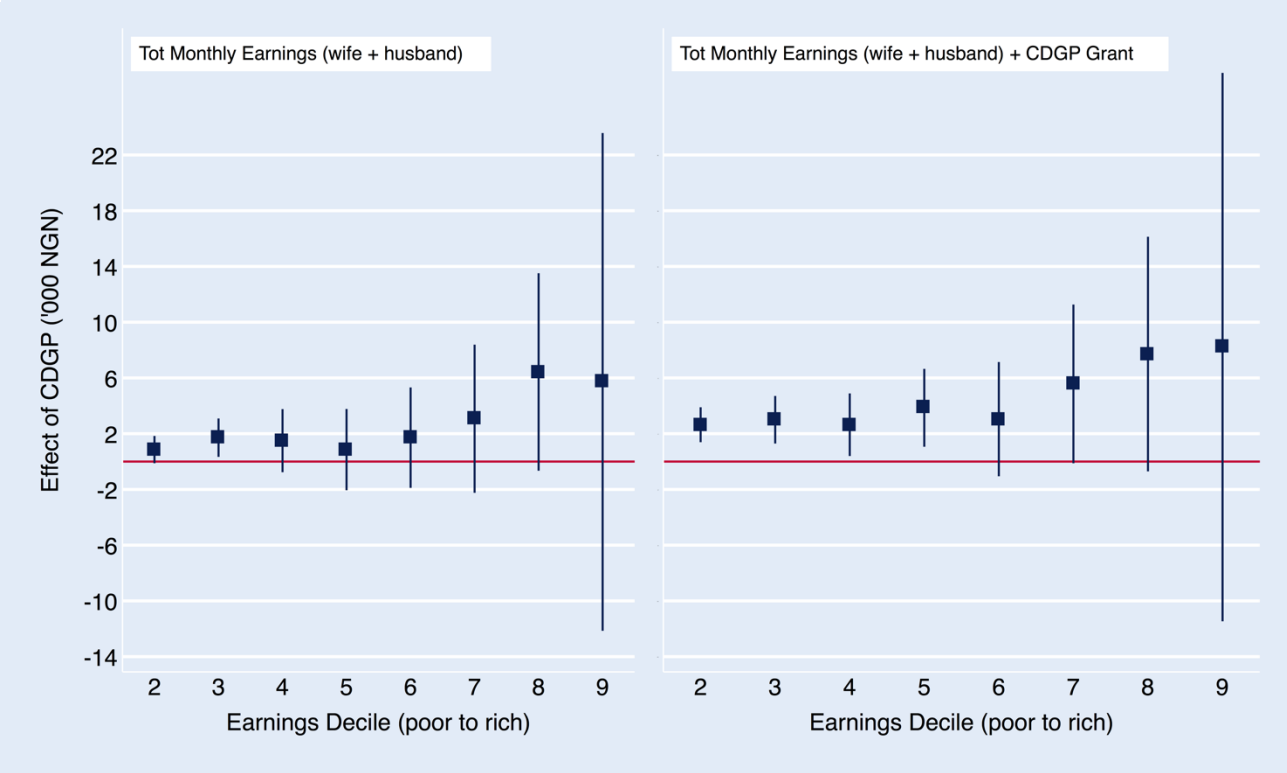
Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.
6. See the notes to Table 4 for the definitions of the indicators.

The size of these impacts on household income are not necessarily the same across all households in the sample. Figure 28 provides a sense of the relative characteristics of households whose earnings are increased by the CDGP payments. To do this we break the sample into 10 groups called deciles. Decile 1 is the poorest 10% of the sample and decile 10 is the richest 10% of the sample based on their earnings. For each decile, the square is the point estimate of the

effect of the CDGP on earnings and the dark blue line is the 95% confidence interval. We see that for households in the bottom 50% of the distribution of total household income, there are statistically significant increases in total household resources once the CDGP payments are included. For the richest households, the impacts of the programme on earnings are on average higher than the impacts for poorer households, but there is also greater variance (as seen by the wider 95% confidence interval).

Figure 28: Effect of the CDGP on earnings, broken down by wealth decile



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The chart depicts the effect of the CDGP on different deciles of the distribution of earnings. For example, if the effect on the 5th decile (i.e. the median) of earning is NGN 1,000, it means that the median of the distribution has been shifted upwards by NGN 1,000 due to the CDGP.
3. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval. Estimates for the first decile are not reported, because of zero values for earnings in the lower tail of the distribution.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.
5. See the notes to Table 4 for the definitions of the indicators.

5.2 Land cultivation

An extremely high proportion of households are engaged in land cultivation activities across the CDGP LGAs. Table 5 shows that the CDGP did not have a significant effect on the likelihood that either men or women cultivated land, although there is an increase in crop sales for women in CDGP households. However, only 5% of women cultivate land themselves, and the value of their crop sales is small (NGN 155 in non-CDGP communities as compared with NGN 414 in CDGP communities). The CDGP did not impact the crop sales of men.

The qualitative midline found that, due to CDGP transfers, some husbands were able to spend more time on their own farms because they did not have to engage in stop-gap activities or labour migration to meet the short-term income needs of the household, and that this had led to increased farm production and more food stocks for the year. Households' grain stocks from their own

production last longer, because of reduced pressure to sell the harvest to meet monetary needs. This suggests that husbands may have been producing more but selling around the same amount. While we do not have evidence on the amount produced, and so are unable to fully verify this, we do see that there is no difference in crop sales between CDGP and non-CDGP communities.

In Volume II, we provide further details on inputs used for land cultivation.

Table 5: Land cultivation

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Wife's report								
% women cultivating any land in past 12 months	3688	4.1	1007	**5.0**	2106	**5.0**	0.29	-0.50
							(1.21)	(1.47)
Crop sales in past 12 months‡	3686	458.2	1007	**154.6**	2106	**414.4**	**276.88****	126.28
		(3888.8)		(2047.6)		(3854.3)	(123.43)	(182.21)
Husband's report								
% husbands cultivating any land in past 12 months	3688	95.6	1022	**96.5**	2117	**95.3**	-1.20	2.78
							(1.04)	(1.79)
Crop sales in past 12 months‡	3668	32525.0	1008	**44172.8**	2081	**43706.6**	-227.38	-928.90
		(66794.6)		(85028.8)		(85050.2)	(3680.23)	(4912.91)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

‡Values above the 99th percentile are put to missing. The value is zero if there are no expenditure/sales in the past three months.

5.3 Animal rearing

In terms of animal rearing, there is a significant increase in the likelihood that a woman owns animals in CDGP communities relative to non-CDGP communities. The magnitude of the impact is around 7% of the baseline level. Figure 29 highlights that the form in which these owned animals appear are chickens and goats that might provide a form of liquid asset, rather than larger-scale productive animals such as a cow or bull.

In Volume II, we provide further details on purchases and sales of livestock by livestock type.

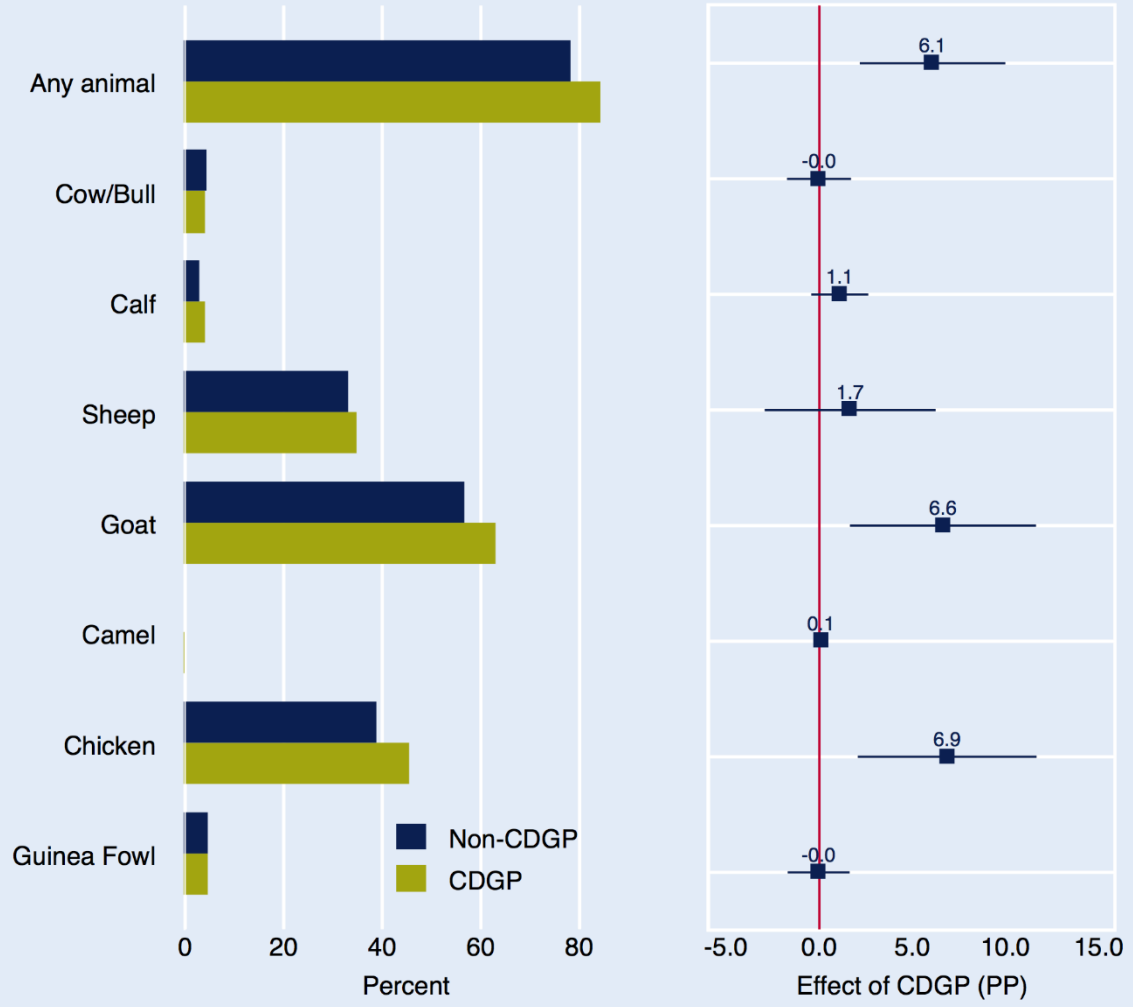
Table 6: Household livestock

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of households owning any animal	3688	71.1	1051	**89.8**	2171	**89.8**	0.07	0.17
							(1.44)	(1.51)
% of households purchased any animal in the past 12 months	3688	21.1	1051	**50.3**	2171	**52.7**	2.88	2.81
							(2.16)	(2.60)
% of households sold any animal in the past 12 months	3688	28.7	1051	**45.4**	2171	**44.1**	-1.43	0.01
							(2.07)	(2.81)
% of women owning any animal herself	3688	58.3	1009	**78.3**	2109	**84.4**	**6.07*** **	1.41
							(1.98)	(1.77)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. Animals include cows/bulls, calves, sheep, goats, camels, chicken, guinea fowl, donkeys, mules, and horses.

Figure 29: Effect of the CDGP on women's livestock ownership



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

5.4 Household savings, borrowing and lending

This section reports on the impacts of the CDGP on household saving, borrowing and lending. In terms of financial transactions, Table 7 shows that we see little change in household borrowing due to CDGP. There are no significant differences in the proportion of households who are currently borrowing money, who have tried to borrow money in the past 12 months but been unable to, or who are providing a loan to another household. However we do find that the value of loans that CDGP households are providing to other households is significantly lower than for non-CDGP households. As seen in Figure 30 and Figure 31, borrowing from family and friends is by far the most common source of loans with around 30% of households doing such borrowing. CDGP

households are three percentage points less likely to be borrowing from family and friends and they are less likely to have been turned down when asking for a loan from family or friends.

Table 7: Household borrowing and lending

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of households with any member borrowing money from any source‡	3688	33.4	796	**56.5**	1668	**53.6**	-3.17	-0.01
							(2.24)	(2.76)
% of households with any member trying to borrow money from any source, but failing, in the past 12 months‡	3688	16.6	796	**25.2**	1668	**23.7**	-1.69	-0.32
							(2.09)	(2.43)
Total value of borrowing, '000 NGN‡‡	3213	3.3	771	**11.9**	1623	**10.2**	-1.72	-0.93
		(12.6)		(23.6)		(22.1)	(1.06)	(1.26)
% of households with any member providing loans	3461	13.5	870	**37.7**	1853	**35.2**	-2.89	1.42
							(1.95)	(2.15)
Total value of loans, '000 NGN‡‡	3409	1.45	844	**6.69**	1807	**5.10**	**-1.55*****	-0.70
		(7.19)		(15.60)		(12.97)	(0.57)	(0.59)

Source: CDGP baseline and midline data. Notes:

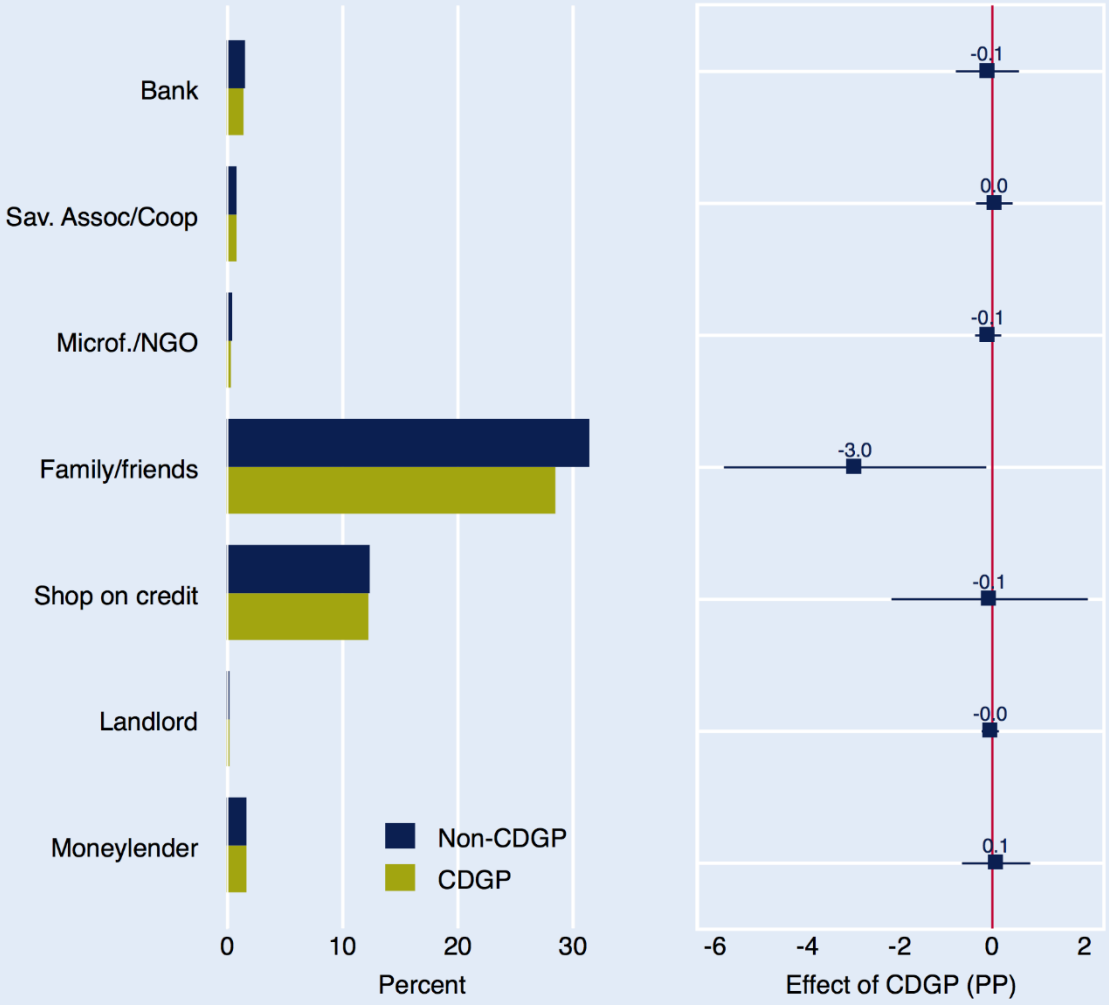
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

‡Sources considered: bank, savings association/cooperative, microfinance institution/NGO, family or friends, a shop on credit, landlord, moneylender.

‡‡Values above the 99th percentile are put to missing. Value is zero if no savings/loans.

Figure 30: Effect of the CDGP on borrowing

Responses to question: 'Is any member of the household currently borrowing from […]?'

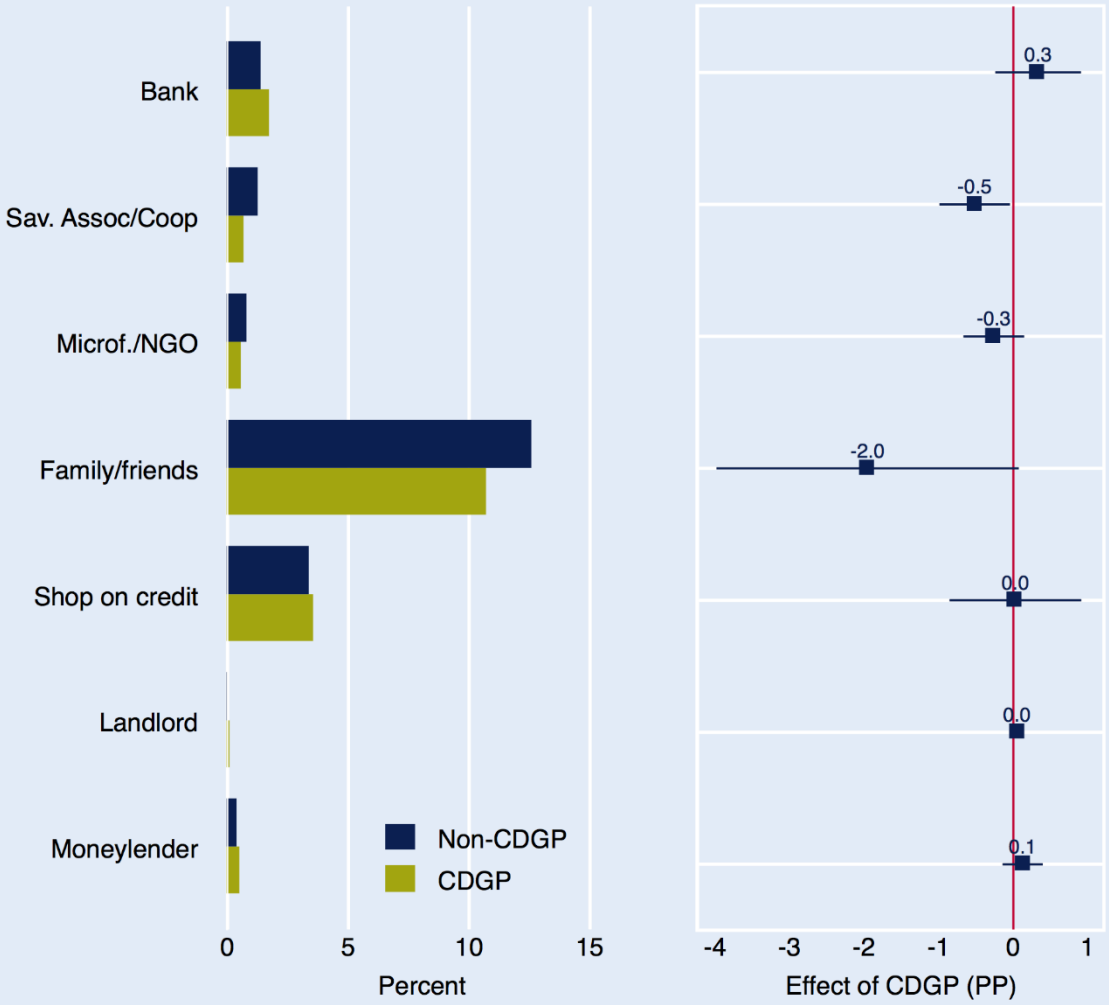


Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Figure 31: Effect of the CDGP on borrowing failure

Responses to question: 'In the past 12 months, has anyone in the household tried to borrow from […] but was unable to?'



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Table 8 highlights that we find little evidence of any difference in the total value of savings of CDGP households compared with non-CDGP households, either in cash or in-kind (such as stored crops or seed. Animals were excluded from in-kind savings as they were reported on separately; see Section 5.3). There is also no difference in the likelihood of having savings (for example at a bank, a savings association or cooperative, a microfinance institution or NGO, an informal savings group or at home) due to CDGP.

Table 8: Household savings

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of households with any member saving at any institution	3638	40.3	844	**61.5**	1770	**62.6**	2.21	1.00
							(2.51)	(2.83)
% of households with any member having in-kind savings	3650	42.2	844	**55.1**	1771	**56.9**	2.10	1.41
							(2.86)	(3.36)
Value of savings								
Total value of savings (excl. in kind), '000 NGN‡	3191	9.0	785	**15.2**	1659	**14.7**	-0.10	-0.19
		(32.0)		(37.1)		(36.9)	(1.79)	(1.95)
Total value of in-kind savings, '000 NGN‡	3190	12.9	785	**58.4**	1676	**55.1**	-1.14	-5.04
		(43.9)		(121.8)		(128.5)	(5.60)	(7.05)
Total value of savings (incl. in kind), '000 NGN‡	3056	26.4	785	**82.8**	1663	**77.2**	-3.45	-13.61
		(78.3)		(158.4)		(158.5)	(7.51)	(9.02)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

‡Values above the 99th percentile are put to missing. Value is zero if no savings/loans. ‡‡Values above the 99th percentile are put to missing. The value is missing if there are no savings/loans in the past three months.

6 Impact of the CDGP on KAP about maternal health and IYCF practices

Key findings

We find that CDGP has a strikingly positive impact on a wide range of indicators measuring women's and men's *knowledge and beliefs* about healthy breastfeeding and IYCF practices. This includes beliefs among women that it is best to start breastfeeding immediately or within 30 minutes of birth, that children should not receive something other than breast milk on the first day, that the colostrum is good for the baby, and that it is not advisable to give a baby under 6 months water. The fact that impacts are observed for both men and women is important, because it shows that **the knowledge impact of the programme is spread across household members and does not stay exclusively with women**.

We also find that the CDGP leads to improved *practices*, in particular around the use of antenatal services, exclusive breastfeeding, and dietary diversity of young children. There are significant increases in the use of ANC in CDGP areas of nearly double the utilisation of ANC services for women who were pregnant at the time of the midline survey in non-CDGP communities. However apart from ANC services, the CDGP did not have a significant impact on the likelihood that a woman had visited a health facility to obtain treatment or medicines for herself or her children.

In terms of dietary diversity and IYCF practices, the CDGP has significantly increased the proportion of infants under six months of age who are fed exclusively with breast milk. At midline, 70% of children under six months are reported as being exclusively breastfed in CDGP communities compared to 28% of children in non-CDGP communities.

There were also improvements in practices related to older children in terms of dietary diversity measures. The biggest improvements relate to dairy products. Altogether these results indicate remarkable changes due to CDGP. Although when interpreting the findings on health and nutrition practices, it is important to bear in mind that these reflect *self-reported* practices, and may be subject to some degree of reporting bias.

6.1 Women's and men's knowledge and beliefs about health

Table 9 demonstrates direct causal impacts of the CDGP on a wide range of knowledge indicators for women. We see the CDGP had a large impact on a number of indicators, including:

- the percentage of women thinking it is best to start breastfeeding immediately or within 30 minutes of birth (42% in non-CDGP communities compared with 69% in CDGP communities);
- the percentage of women thinking children should receive something other than breast milk on the first day (34% in non-CDGP communities compared with 11% in CDGP communities);
- the percentage of women thinking colostrum is good for the baby (69% in non-CDGP communities compared with 88% in CDGP communities); and
- the percentage of women thinking it is ok to give a baby under six months water when it is very hot outside (65% in non-CDGP communities compared with 26% in CDGP communities).

Table 10 shows similarly widespread impacts on husbands' knowledge, which is important because it shows that the knowledge impact of the programme is spread across household

members, and it does not stay exclusively with women. Figure 32 provides a graphical summary of these changes by gender: this again highlights the large impacts especially on knowledge and attitudes related to breastfeeding and delivery. These results closely echo findings from the qualitative midline. The key BCC messages related to breastfeeding seem to have been widely received and understood, implying striking differences from the situation at baseline (Sharp & Cornelius, 2017, p. 39). This is particularly true for exclusive breastfeeding until the child is six months old (KM1). It also seems plausible that some of these improvements in knowledge might have 'spilled over' to neighbouring communities irrespective of whether or not the CDGP operated there. In such cases, the effects we observe here might be underestimating the actual effect of the CDGP intervention. We devote Section 9 in Volume II to exploring this aspect in our data.

Table 9: Wife – knowledge and attitudes

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of pregnant women saying they have been eating more since becoming pregnant	3642	25.7	364	**32.1**	743	**39.0**	**7.34****	4.91
							(2.89)	(3.87)
% who would advise a pregnant woman to visit a health facility								
For a check-up if she is healthy and nothing is wrong	3688	69.0	1009	**83.0**	2109	**91.5**	**7.90*****	0.10
							(2.04)	(1.72)
For a check-up if there are complications with the pregnancy	3688	93.1	1009	**97.2**	2109	**98.5**	1.23	0.44
							(0.78)	(0.66)
If she is about to give birth and the cost of travel and treatment was NGN 2,000	3688	80.7	1009	**86.4**	2109	**93.4**	**6.50*****	0.85
							(1.64)	(1.39)
If she is about to give birth and there's no female staff available	3688	69.7	1009	**52.2**	2109	**65.1**	**12.14*****	0.30
							(2.30)	(2.61)
% of women saying the best place to give birth is at a health facility	3677	15.4	1008	**22.7**	2106	**36.8**	**12.90*****	1.20
							(3.02)	(3.95)
% of women thinking it is best to start breastfeeding immediately or within 30 minutes of birth	3688	18.1	1009	**42.4**	2109	**68.6**	**26.17*****	2.07
							(2.78)	(2.85)
% of women thinking it is best to start breastfeeding within one hour of birth	3688	34.4	1009	**62.7**	2109	**83.7**	**20.70*****	**5.44****
							(2.63)	(2.28)
% of women thinking children should receive something other than breast milk on the first day	3688	49.7	1009	**33.5**	2109	**11.4**	**-21.83*****	**-4.91****
							(2.83)	(2.05)
Weeks baby should receive only breast milk	3126	7.9	986	**15.4**	2094	**22.4**	**6.89*****	**1.88****
		(12.0)		(13.0)		(9.4)	(0.81)	(0.66)
% of women thinking colostrum is good for the baby	3688	61.1	1009	**68.7**	2109	**87.8**	**19.99*****	2.37
							(2.34)	(2.03)
% of women thinking it is ok to give baby under six months water when it is very hot outside	3688	89.6	1009	**65.0**	2109	**25.9**	**-38.78*****	**-5.71***
							(3.43)	(3.17)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.

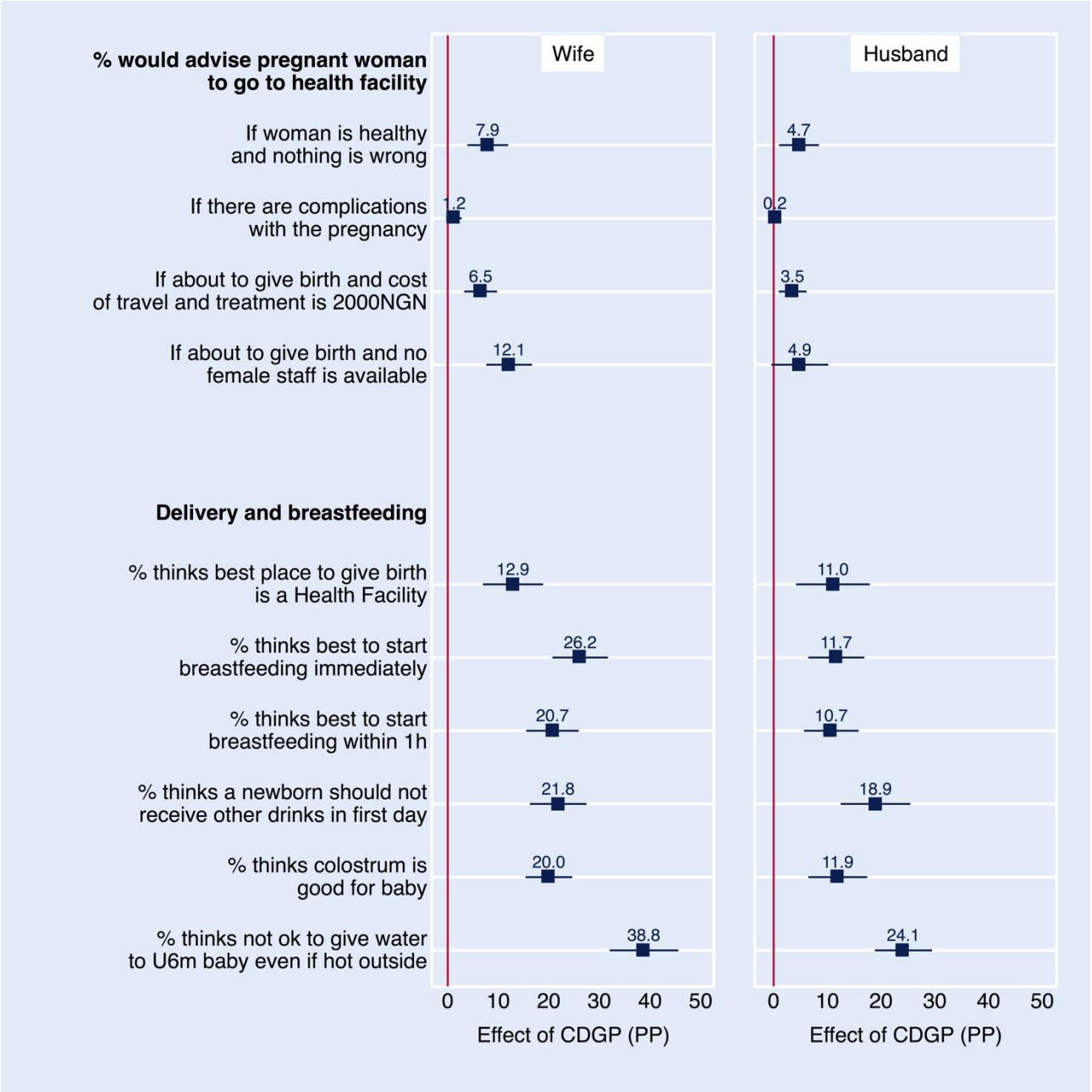
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 10: Husband – knowledge and attitudes

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% who would advise a pregnant woman to visit a health facility								
For a check-up if she is healthy and nothing is wrong	3688	73.8	621	**88.7**	1317	**93.8**	**4.71****	1.35
							(1.88)	(1.74)
For a check-up if there are complications with the pregnancy	3688	96.2	621	**98.9**	1317	**99.2**	0.24	-0.18
							(0.51)	(0.50)
If she is about to give birth and the cost of travel and treatment was NGN 2,000	3688	87.2	621	**92.3**	1317	**96.0**	**3.53*****	-0.13
							(1.31)	(1.13)
If she is about to give birth and there's no female staff available	3688	77.3	621	**63.1**	1317	**68.5**	**4.86***	-1.38
							(2.68)	(2.95)
% of men saying the best place to give birth is at a health facility	3670	20.2	617	**29.0**	1315	**40.9**	**11.03*****	1.48
							(3.48)	(4.27)
% of men thinking it is best to start breastfeeding immediately or within 30 minutes of birth	3688	17.8	621	**32.2**	1317	**44.3**	**11.65*****	-1.87
							(2.64)	(3.17)
% of men thinking it is best to start breastfeeding within one hour of birth	3688	33.1	621	**49.8**	1317	**60.8**	**10.73*****	-2.74
							(2.58)	(2.94)
% of men thinking children should receive something other than breast milk on the first day	3688	46.7	621	**37.5**	1317	**17.5**	**-18.94*****	-2.12
							(3.28)	(2.82)
% of men who do not know how many weeks children should receive only breast milk	3688	47.8	621	**54.1**	1317	**76.7**	**21.27*****	3.67
							(3.14)	(3.08)
Weeks baby should receive only breast milk	1927	0.17	285	**0.23**	307	**0.45**	**0.23****	-0.09
		(0.82)		(0.59)		(1.15)	(0.09)	(0.15)
% of men thinking colostrum is good for the baby	3688	55.6	621	**42.4**	1317	**54.1**	**11.92*****	-0.28
							(2.78)	(3.28)
% of men thinking it is ok to give baby under six months water when it is very hot outside	3688	88.5	621	**73.6**	1317	**47.6**	**-24.14*****	**-7.34****
							(2.70)	(3.33)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Figure 32: Effect of the CDGP on knowledge and attitudes



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Panels show the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
3. Effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

6.2 Maternal health and ANC practices

To assess the effect of the CDGP on the use of antenatal care services, we compare use of ANC among women who were pregnant at the time of the midline survey between CDGP and non-CDGP areas[23]. We also compare women who gave birth after the baseline survey. Table 11 shows that there are dramatic increases in use of ANC caused by the CDGP for women who were pregnant at the time of the midline survey. This could be due to the cash transfer or the BCC or both. The CDGP nearly doubles the utilisation of ANC services relative to non-CDGP communities. Table 12 shows that the CDGP also had a positive impact on the likelihood that women who gave birth after the baseline received ANC during the pregnancy (increasing it from 61% in non-CDGP communities to 72% in CDGP communities).

In Volume II we present more detailed evidence on the frequency of use of ANC, as well as on the kinds of treatment received.

Table 11: ANC for women who were pregnant at the time of the midline survey

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of women who have had ANC for current pregnancy	3683	31.1	364	**19.5**	744	**35.9**	**15.74*****	-0.82
							(3.29)	(4.43)
If not: % of women who plan to receive any ANC during the pregnancy	2370	42.1	279	**69.5**	463	**84.2**	**13.25*****	-1.58
							(3.79)	(3.93)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014 and also pregnant during the midline survey in 2016. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 12 shows that, for children born after the start of the CDGP, they were more likely to be born at a health facility and hence the birth was more likely to be assisted by a doctor, nurse, midwife or community health extension worker (CHEW).

[23] The sample for this analysis is women who were pregnant at the time of the baseline and midline surveys. We note here that if CDGP has a fertility effect, the sample of women who are also pregnant at midline in CDGP areas may have systematically different characteristics from those in non-CDGP areas. This may introduce endogeneity (bias) into the impact estimation, and therefore the magnitude of these estimates should be treated with caution.

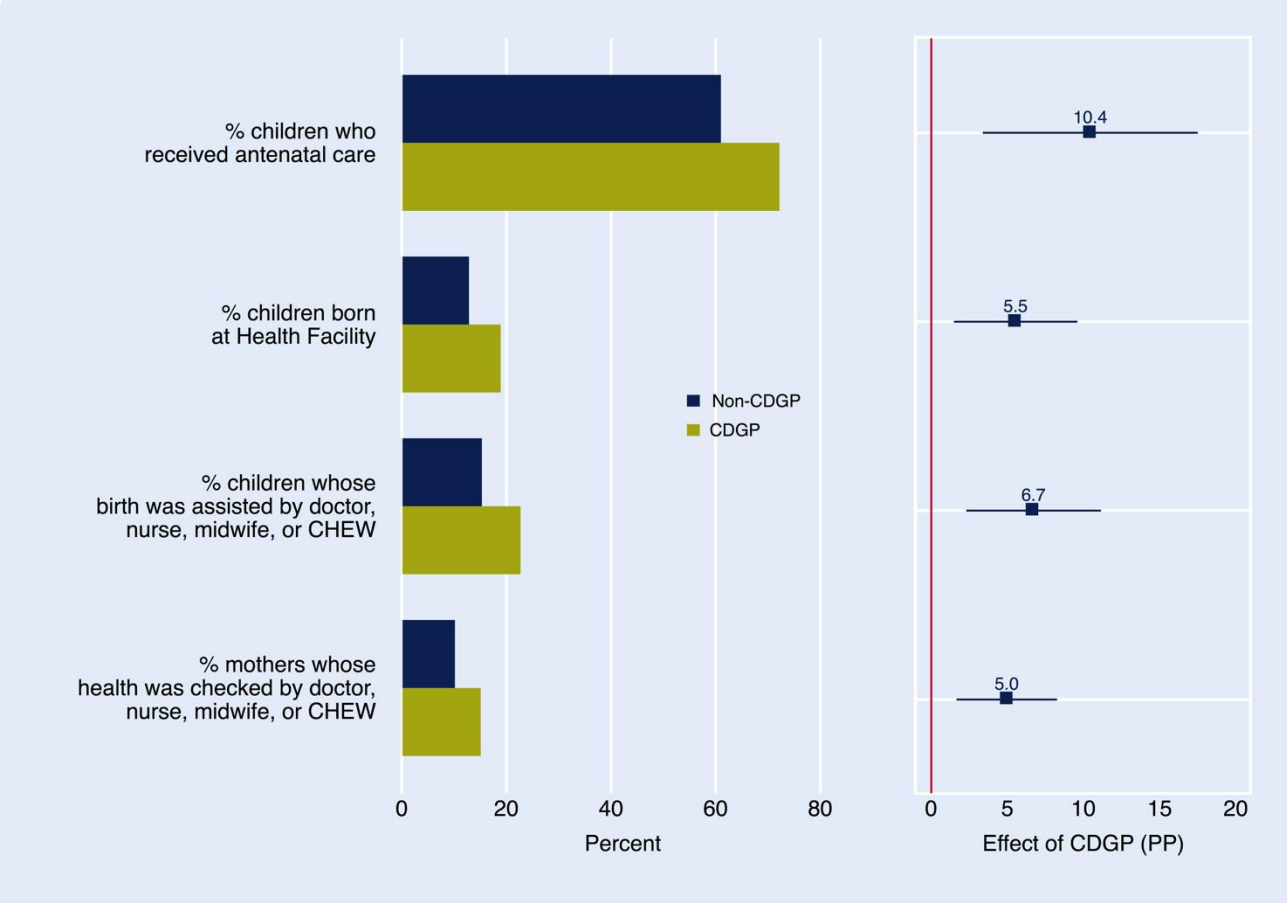
Table 12: ANC and delivery for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of children whose mother had ANC during the pregnancy	865	**61.0**	1853	**72.3**	**10.44*** **	-1.43
					(3.58)	(3.73)
% of children born at a health facility	857	**12.9**	1841	**19.0**	**5.54*** **	-1.65
					(2.06)	(3.04)
% of children whose birth was assisted by a doctor, nurse, midwife or CHEW	865	**15.5**	1853	**22.7**	**6.72** **	-1.48
					(2.24)	(3.55)
% of mothers whose health was checked after birth by a doctor, nurse, midwife or CHEW	857	**10.2**	1841	**15.3**	**4.96*** **	-0.22
					(1.67)	(2.11)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Figure 33: Effect of the CDGP on ANC and delivery practices for children born after the start of the CDGP (i.e. born after the baseline)



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Table 13 shows that, outside of accessing ANC services, the CDGP did not have a significant impact on the likelihood women had visited a health facility for herself or for her children.

Table 13: Women's treatment at health facility

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
If had ANC: % of women who visited a health facility in the past six months	1147	42.5	363	**62.3**	744	**69.1**	4.65	1.21
							(3.77)	(3.77)
If had no ANC: % women who visited a health facility in the past six months	2537	33.6	645	**66.2**	1363	**68.9**	2.05	-2.51
							(2.54)	(3.26)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 14 summarises the findings on women's fertility preferences and knowledge of contraceptive methods. We find no changes due to CDGP in whether women report that they would like another child in the future, but we do find a significant increase in the percentage of women who have heard of a contraceptive method. Volume II provides more details on the kinds of contraception.

Table 14: Women's contraception and birth spacing

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of women who would like another child (if currently pregnant, after the current pregnancy)	3548	94.4	980	**93.8**	2066	**94.0**	0.06	0.34
							(1.00)	(1.10)
% of women who would prefer to wait at least two years to have another child (if currently pregnant, after the current pregnancy)	3169	82.5	903	**64.6**	1907	**65.1**	0.21	**-5.65*** **
							(2.32)	(2.06)
% of women who have heard of any contraceptive method	3688	64.2	1009	**80.3**	2108	**85.3**	**4.37** **	**-5.16*** **
							(2.03)	(1.93)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

IYCF practices

Table 15 summarises changes in actual practices related to IYCF. Across a wide range of outcomes, we observe significant increases in healthy IYCF practices in women in CDGP communities compared to those in non-CDGP communities. These relate both to breastfeeding practices for young children and nutrition outcomes for older children.

Notably, the CDGP increased the proportion of infants under six months of age who are fed exclusively with breast milk. At midline, 28% of children under six months were reported to be exclusively breastfed in non-CDGP communities as compared to 70% of children in CDGP communities. At baseline, nearly all children were breastfed and so there is little scope for improvement on that margin.

Figure 34 summarises impacts on these practices graphically, showing impacts for each key outcome. The largest impacts are on breastfeeding practices. Again, this is largely consistent with evidence from the qualitative midline, where women reported having enthusiastically adopted exclusive breastfeeding (Sharp & Cornelius, 2017, p. 39).

Table 15: IYCF for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Child ever breastfed Proportion of children born in the last 24 months who were ever breastfed	736	**99.6**	1738	**99.7**	0.13	-0.16
					(0.30)	(0.23)
Age-appropriate breastfeeding Proportion of children 0–23 months of age who are appropriately breastfed	600	**38.2**	1497	**41.9**	4.12	2.86
					(2.51)	(2.90)
Early initiation of breastfeeding (immediately) Proportion of children born in the last 24 months who were put to the breast within one hour of birth	729	**44.3**	1732	**70.8**	**26.40*** **	5.20
					(3.16)	(3.25)
Early initiation of breastfeeding (24 hours) Proportion of children born in the last 24 months who were put to the breast within 24 hours of birth	729	**76.3**	1732	**92.0**	**15.07*** **	0.41
					(3.01)	(2.02)
Exclusive breastfeeding among children under six months Proportion of infants 0–5 months of age who are fed exclusively with breast milk	65	**27.7**	148	**69.6**	**40.43*** **	12.51
					(7.20)	(8.63)
Predominant breastfeeding among children under six months Proportion of infants 0–5 months of age who are predominantly breastfed	66	**81.8**	148	**86.5**	2.57	**10.57***
					(5.84)	(5.68)
Continued breastfeeding at one year (12–15 months) Proportion of children 12–15 months of age who are fed breast milk	35	**91.4**	105	**87.6**	-3.09	-8.27
					(5.94)	(6.37)
Continued breastfeeding at two years (20–23 months) Proportion of children 20–23 months of age who are fed breast milk	335	**20.3**	806	**19.9**	0.16	0.05
					(2.78)	(3.27)
Milk feeding frequency Proportion of non-breastfed children 6–23 months of age who receive at least two milk feedings in 24 hours	301	**13.3**	774	**24.7**	**11.81*** **	1.03
					(2.65)	(3.71)
Introduction of solid, semi-solid or soft foods (6–8 months) Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods	28	**64.3**	64	**54.7**	-9.63	-9.14
					(10.41)	(12.55)
	534	**16.3**	1349	**24.5**	**8.28*** **	2.74

Consumption of iron-rich/fortified foods (6–23 months) Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home					(2.33)	(2.76)
Minimum meal frequency (6–23 months) Proportion of breastfed and non-breastfed children 6–23 months old who receive solid, semi-solid or soft foods (including milk feeds for non-breastfed children) the minimum number of times or more	533	**57.0**	1349	**63.4**	**6.66***** (2.46)	-2.08 (2.98)
Minimum dietary diversity (6–23 months) Proportion of children 6–23 months of age who receive foods from four or more food groups+	534	**39.5**	1349	**51.5**	**12.72***** (2.55)	0.44 (2.83)
Minimum acceptable diet (6–23 months) Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk)++	534	**13.7**	1349	**20.8**	**7.55***** (2.23)	0.11 (2.48)
Exclusively breastfed for at least six months (if already stopped exclusively breastfeeding)	858	**11.7**	1772	**43.0**	**29.73***** (2.89)	**8.11**** (3.86)

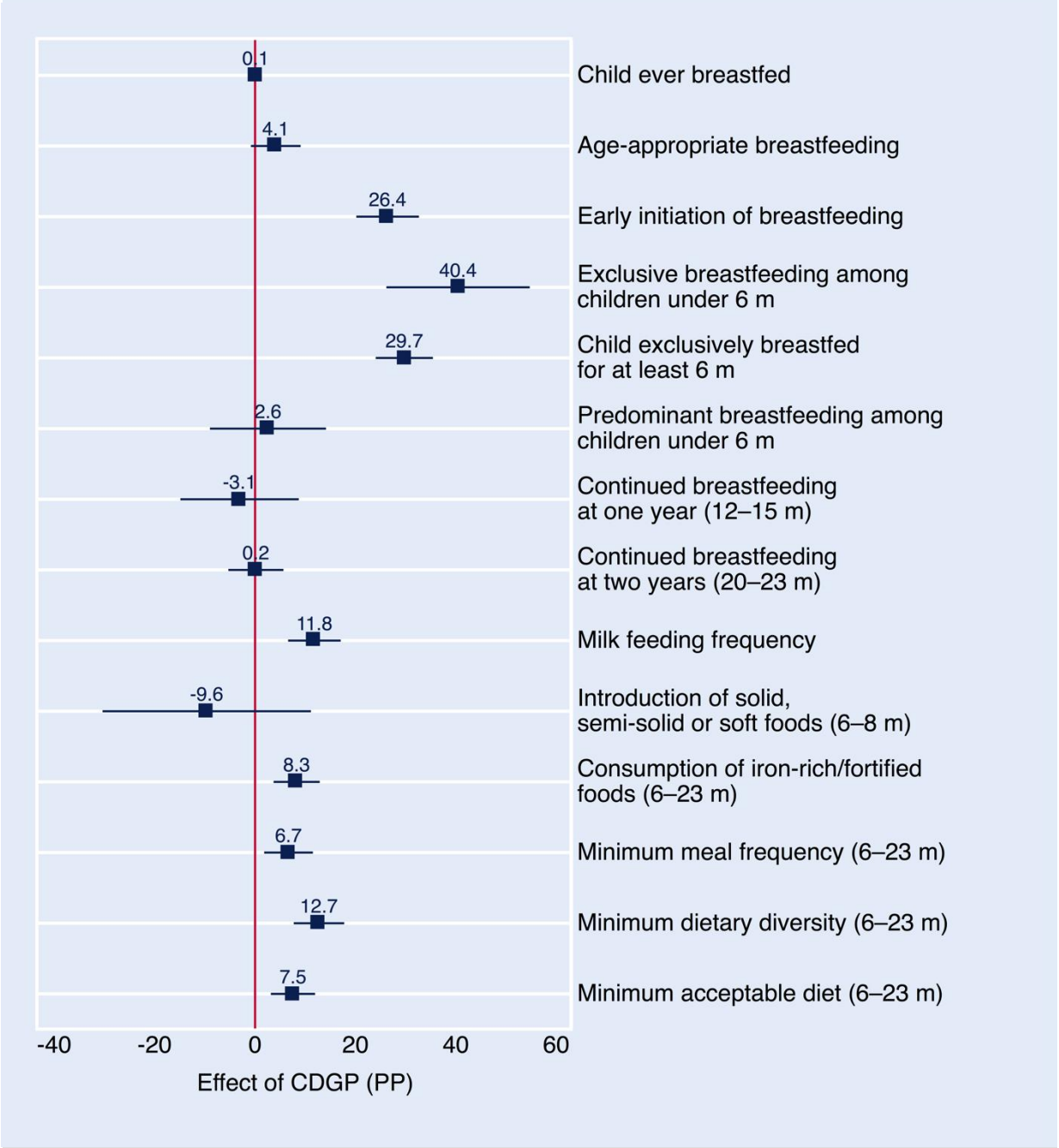
Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

+The seven food groups used for calculation of this indicator are: (1) grains, roots and tubers; (2) legumes and nuts; (3) dairy products (milk, yoghurt, cheese); (4) flesh foods (meat, fish, poultry and liver/organ meats); (5) eggs; (6) vitamin A-rich fruits and vegetables; and (7) other fruits and vegetables.

++This corresponds to the proportion of children who receive both the minimum amount of feeding times and the minimum dietary diversity. See Volume II and World Health Organization Indicators for assessing IYCF practices (WHO, 2008, p. pp. 33 ff.) for the exact definitions and details for the indicators in this table.

Figure 34: Effect of the CDGP on IYCF practices for children born after the start of the CDGP (i.e. born after the baseline)



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Panels show the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
3. Effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Dietary diversity measures children's access to a variety of foods and is a proxy for nutrient adequacy. In terms of dietary diversity measures, Table 16 also shows significant improvements in practices related to older children, as measured by both the WHO Minimum Dietary Diversity (MDD) Indicator and the Food and Agriculture Organization (FAO) Individual Dietary Diversity

Score (IDDS). This is true both for children that were breastfed and those that were not breastfed. As throughout most of this report, there are no significant differences between low- and high-intensity BCC CDGP communities on these outcomes.

Table 16: Nutrition for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
6–23 months old, breastfed						
MDD Indicator (WHO)+	301	**3.28**	773	**3.68**	**0.42*** **	-0.03
		(1.09)		(1.16)	(0.08)	(0.09)
IDDS (FAO)++	301	**3.60**	773	**3.95**	0.37	-0.03
		(1.23)		(1.28)	(0.09)	(0.10)
6–23 months old, not breastfed						
MDD Indicator (WHO)+	232	**2.81**	571	**3.11**	**0.30****	0.09
		(1.41)		(1.45)	(0.12)	(0.12)
IDDS (FAO)++	232	**3.00**	571	**3.28**	**0.28****	0.06
		(1.56)		(1.57)	(0.12)	(0.13)
Over 23 months old						
MDD Indicator (WHO)+	371	**3.35**	584	**3.59**	**0.26*** **	0.06
		(1.08)		(1.12)	(0.08)	(0.10)
IDDS (FAO)++	371	**3.63**	584	**3.87**	**0.26*** **	0.03
		(1.18)		(1.25)	(0.09)	(0.12)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. Indicators in this table are constructed using a 24-hour food recall diary, where the mother/carer is asked to list all the foods the child ate during the previous day, from the moment they woke up to when they went to sleep. For each dish, the mother is asked to list each ingredient used, which is then categorised into different food groups. The indicators are constructed by summing the number of food groups the child received.

+The seven foods groups used for calculation of this indicator are: (1) grains, roots and tubers; (2) legumes and nuts; (3) dairy products (milk, yoghurt, cheese); (4) flesh foods (meat, fish, poultry and liver/organ meats); (5) eggs; (6) vitamin A-rich fruits and vegetables; and (7) other fruits and vegetables.

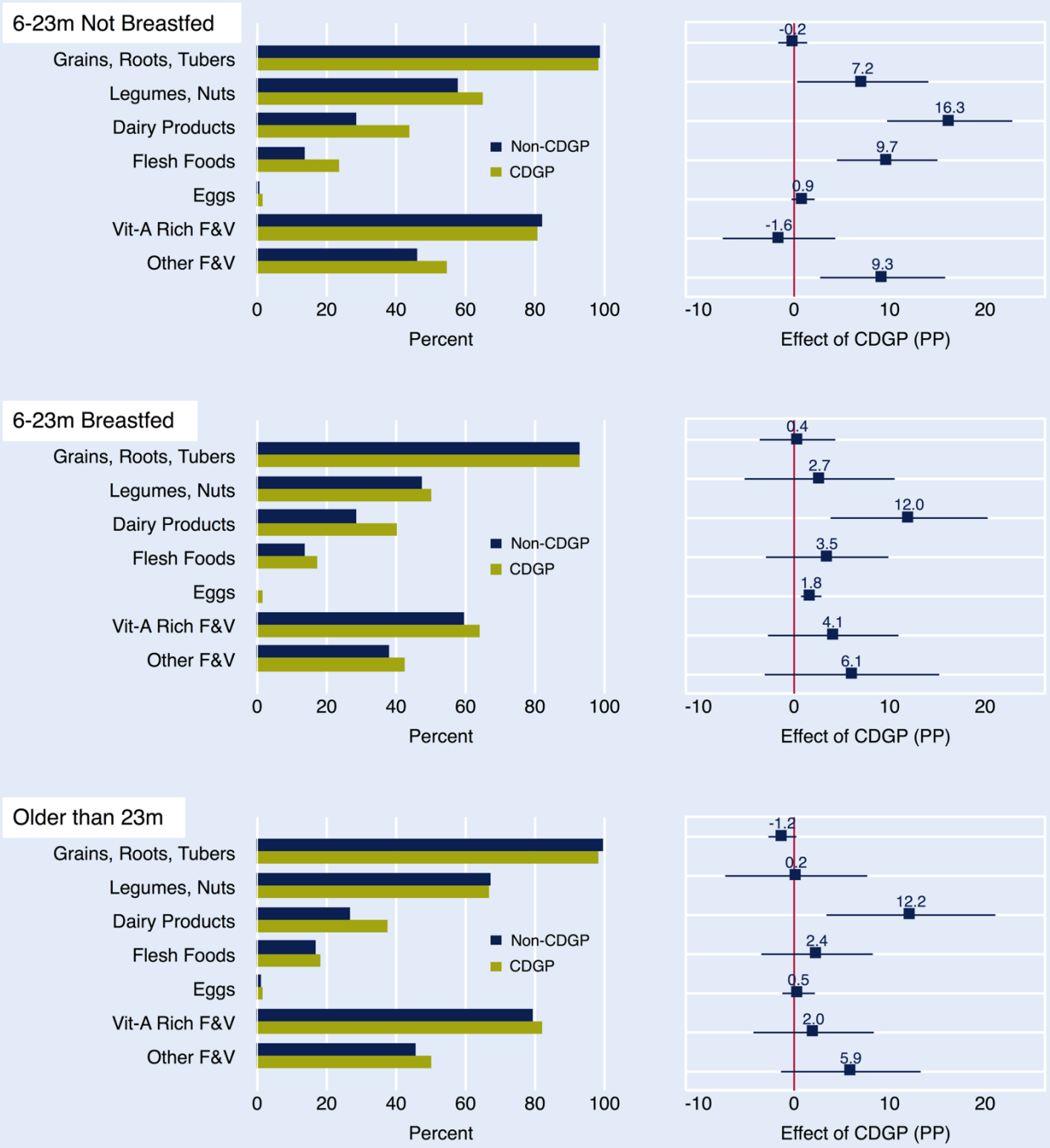
++The nine food groups used for the calculation of this indicator are: (1) starchy staples; (2) dark green leafy vegetables; (3) other vitamin A-rich fruits and vegetables; (4) other fruits and vegetables; (5) organ meat; (6) meat and fish; (7) eggs; (8) legumes, nuts and seeds; and (9) milk and milk products.

Figure 35 and Figure 36 show the effect of the CDGP on dietary diversity. In these results, we show separate impacts on the specific food categories used to construct the MDD and IDDS Indices. The results show that the biggest improvements relate to increased consumption of dairy products.

In Volume II we present the results disaggregated by gender. In summary, we find some evidence that the CDGP had a somewhat large effect on improving the dietary diversity for boys, but we do also find significant, albeit smaller, impacts for girls.

The qualitative midline reports very similar evidence related to dietary improvements (Sharp & Cornelius, 2017, p. 36 ff.). Women have cited the CDGP's role in enabling them to make more autonomous choices in terms of what and when to eat and feed their children, instead of having to rely solely on their husband. This has resulted in a shift from consumption of simple cereal staples to more meat, dairy, nuts and fruits, which we also clearly see in the present findings.

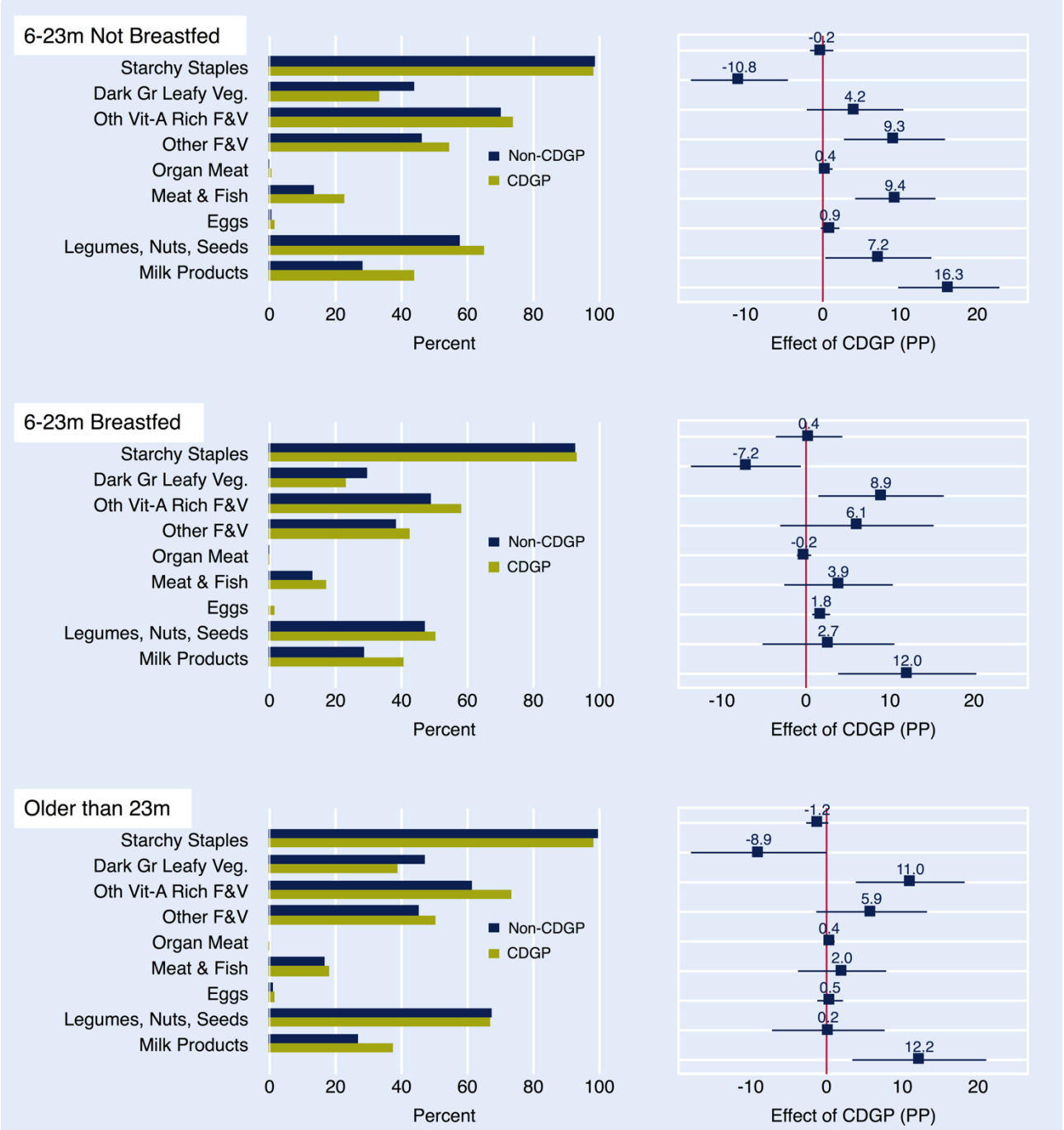
Figure 35: Effect of the CDGP on dietary diversity for children born after the start of the CDGP (i.e. born after the baseline) – MDD Index components



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Graph shows % of children consuming foods from each group in the 24 hours preceding the interview.
3. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
4. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
5. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Figure 36: Effect of the CDGP on dietary diversity for children born after the start of the CDGP (i.e. born after the baseline) – IDDS Index components



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Graph shows % of children consuming foods from each group in the 24 hours preceding the interview.
3. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
4. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
5. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Table 17, Figure 37, and Figure 38 present the results on nutrition for older children born before the start of the CDGP. We present the overall findings on the MDD and IDDS indicators in Table 17, and illustrate these results broken down by the food groups used to construct the MDD and IDDS indicators in Figure 37 and Figure 38 respectively. These results show that the CDGP has also had significant impact on dietary diversity for this age group. The magnitude of impact is broadly comparable to the sample of children aged 23 months and older at the midline (who are also predominantly not breastfed).

Table 17: Nutrition for children born before the start of the CDGP (aged 0–5 at baseline)

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
MDD Indicator (WHO)	2620	2.76	672	**3.53**	1375	**3.76**	**0.25*** **	0.10
		(0.96)		(1.00)		(1.07)	(0.06)	(0.07)
IDDS (FAO)	2620	3.26	672	**3.89**	1375	**4.09**	**0.22*** **	0.10
		(1.15)		(1.08)		(1.17)	(0.06)	(0.08)

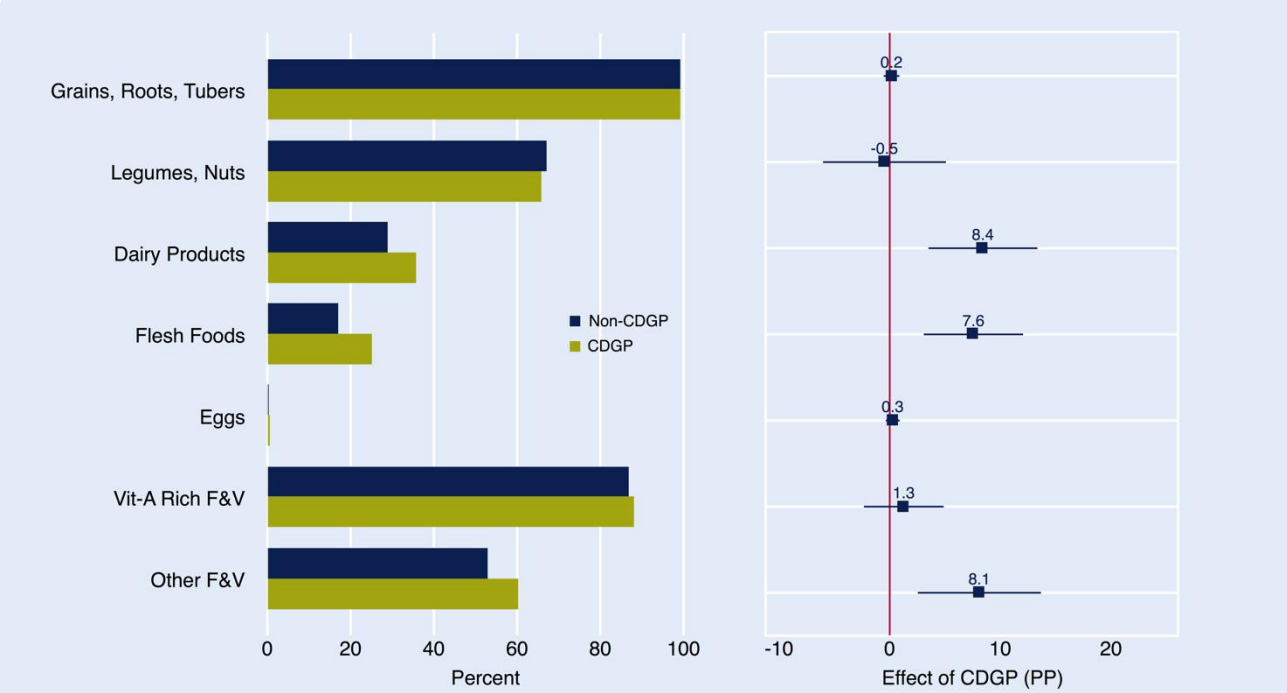
Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. Indicators in this table are constructed using a 24-hour food recall diary, where the mother/carer is asked to list all the foods the child ate during the previous day, from the moment they woke up to when they went to sleep. For each dish, the mother is asked to list each ingredient used, which is then categorised into different food groups. The indicators are constructed by summing the number of food groups the child received.

[+]The seven foods groups used for calculation of this indicator are: (1) grains, roots and tubers; (2) legumes and nuts; (3) dairy products (milk, yoghurt, cheese); (4) flesh foods (meat, fish, poultry and liver/organ meats); (5) eggs; (6) vitamin A-rich fruits and vegetables; and (7) other fruits and vegetables.

[++]The nine food groups used for the calculation of this indicator are: (1) starchy staples; (2) dark green leafy vegetables; (3) other vitamin A-rich fruits and vegetables; (4) other fruits and vegetables; (5) organ meat; (6) meat and fish; (7) eggs; (8) legumes, nuts and seeds; and (9) milk and milk products.

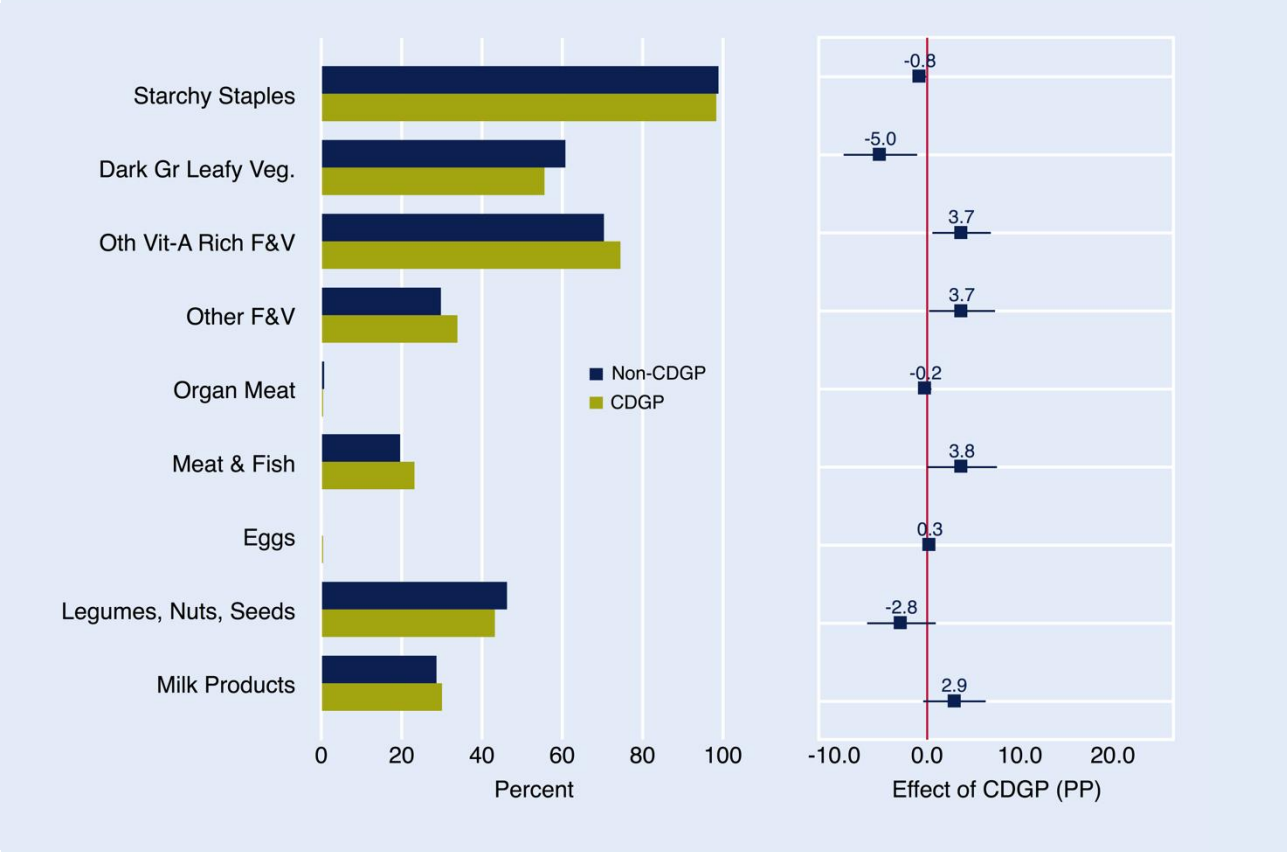
Figure 37: Effect of the CDGP on dietary diversity of children born before the start of the CDGP (aged 0–5 at baseline) – MDD Index components



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Graph shows % of children consuming foods from each group in the 24 hours preceding the interview.
3. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
4. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
5. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Figure 38: Effect of the CDGP on dietary diversity of children born before the start of the CDGP (aged 0–5 at baseline) – IDDS Index components



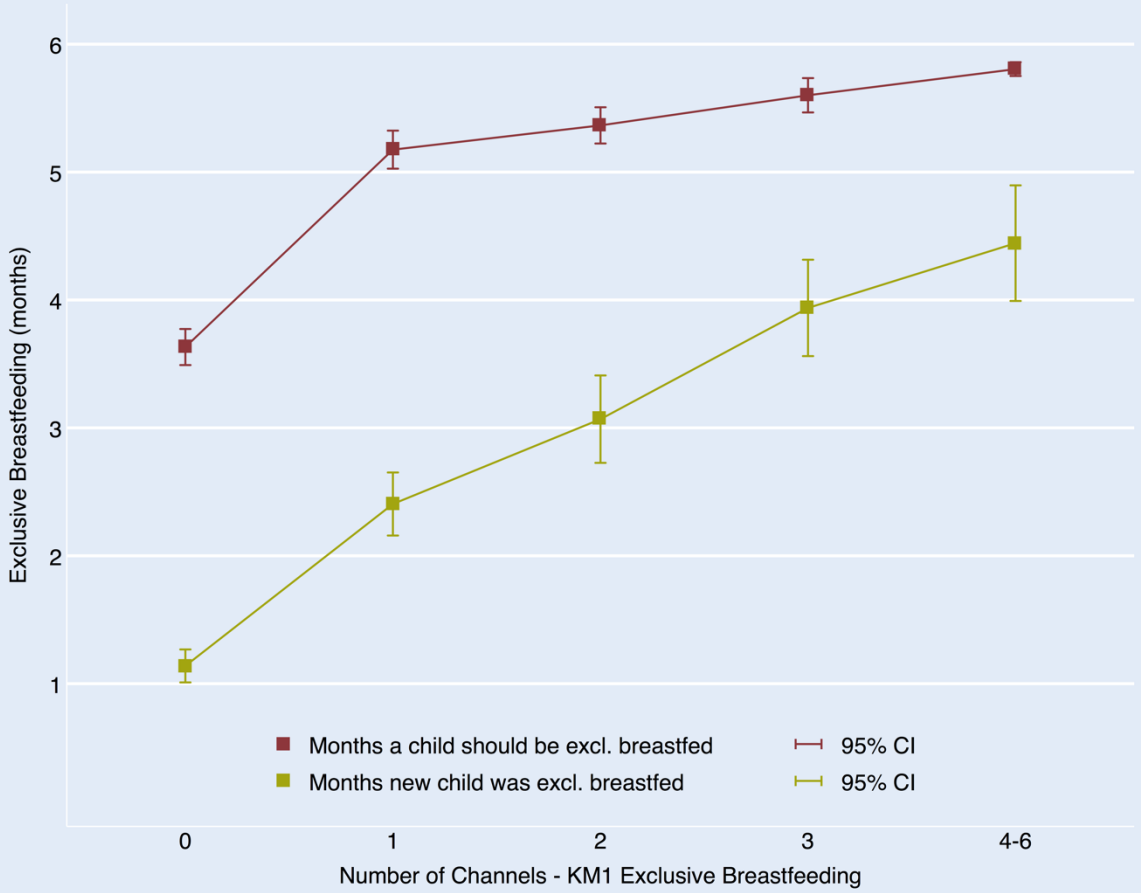
Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Graph shows % of children consuming foods from each group in the 24 hours preceding the interview.
3. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
4. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
5. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

6.3 Relationship between BCC and changes in actual behaviour

Starting from Figure 39, we begin to map the relationship between the messages people are exposed to and changes in actual behaviour. We do so for breastfeeding messages and practices. We see a positive relationship between the number of channels through which breastfeeding messages were obtained, as well as actual changes in the length of breastfeeding. This means that women who were exposed to messages about the benefits of exclusive breastfeeding through more channels exclusively breastfeed for longer.

Figure 39: KM1: Exposure vs. knowledge and practices

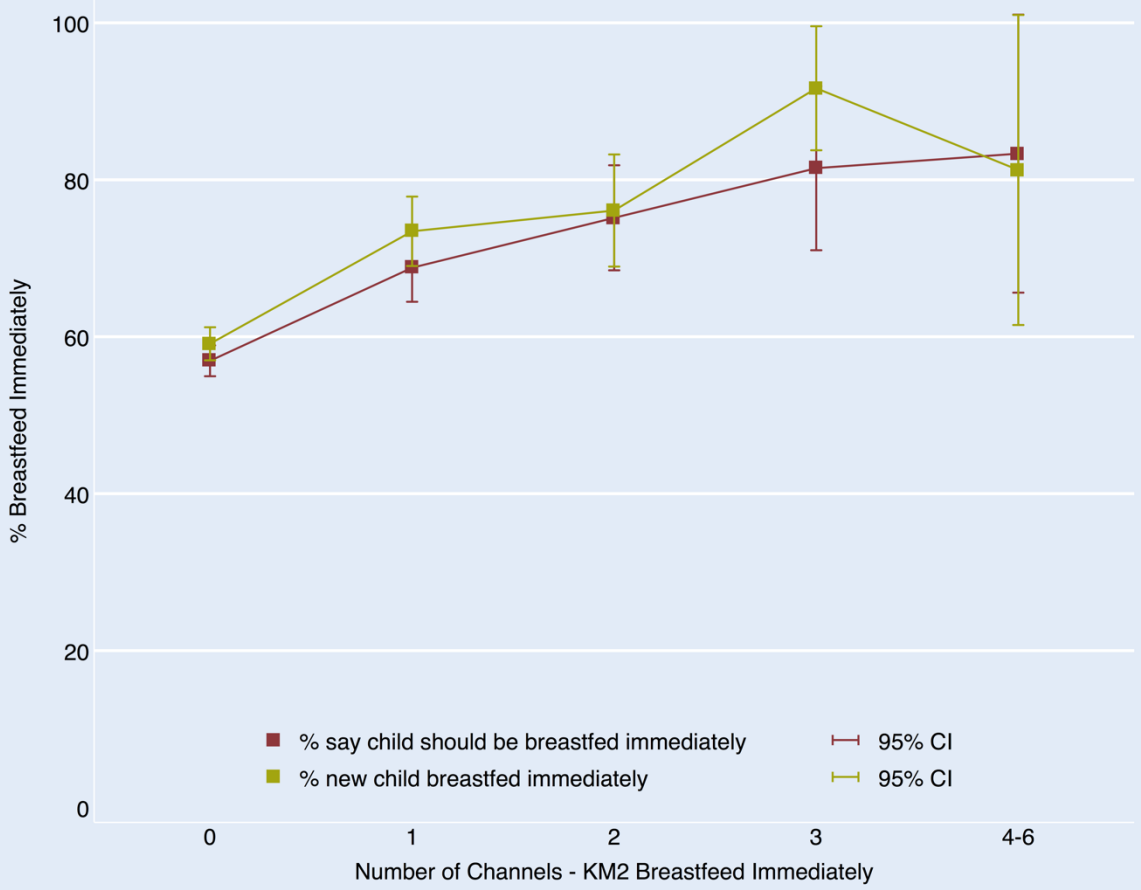


Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The horizontal axis indicates the intensity of the exposure to KM1 (Breastfeed child exclusively until child is six months old. Do not give water, tinned milk, or any other food.) in the BCC – represented by the number of channels the woman recalls having received communications about the message. Channels are posters, radio programmes/ads, health talks, SMS/pre-recorded messages on mobile, small group meetings and 1:1 counselling.
3. On the vertical axis are mean values of indicators relevant to KM1: the red squares indicate how many months the woman thinks children should be exclusively breastfed for, while the green squares indicate how many months children born after the baseline were exclusively breastfed for.

Figure 40 shows a similar positive relationship in terms of whether breastfeeding is immediately initiated after childbirth.

Figure 40: KM2: Exposure vs. knowledge and practices

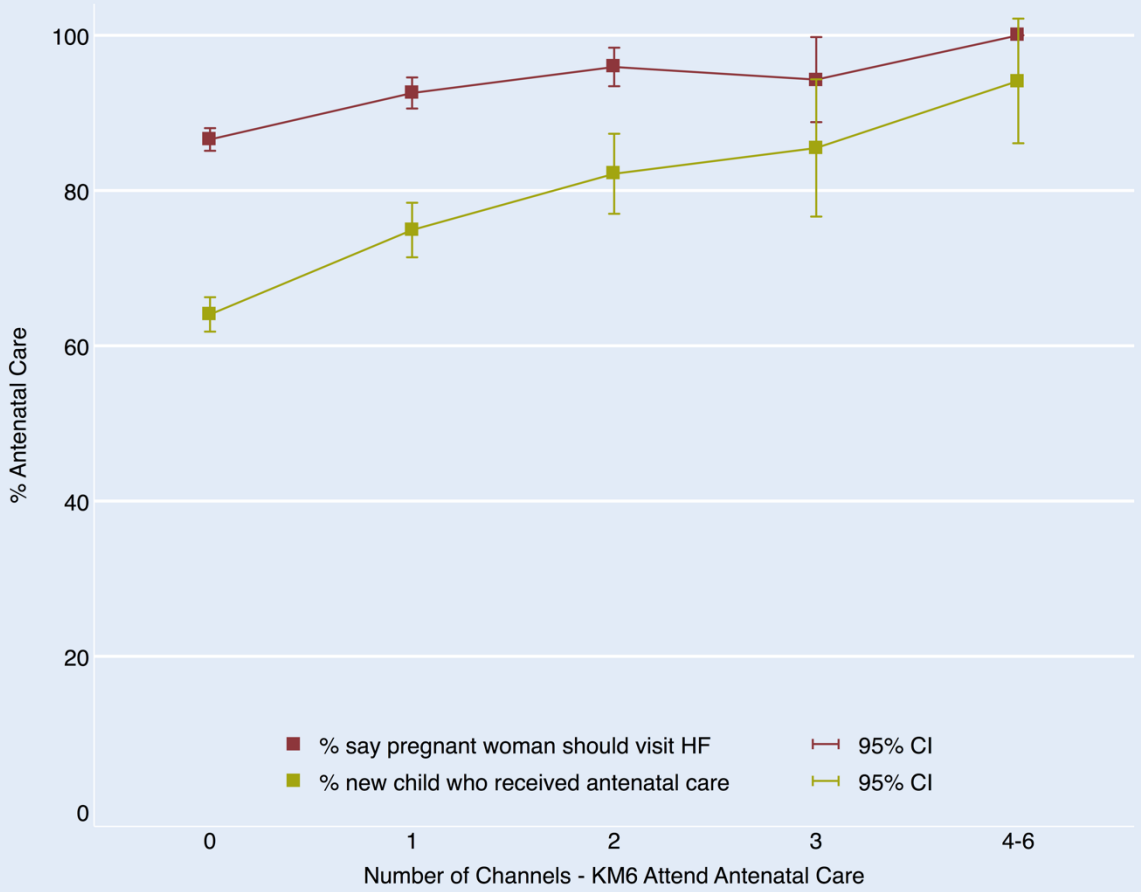


Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The horizontal axis indicates the intensity of the exposure to KM2 (Start breastfeeding your baby within the first 30 minutes of delivery) in the BCC – represented by the number of channels the woman recalls having received communications about the message. Channels are posters, radio programmes/ads, health talks, SMS/pre-recorded messages on mobile, small group meetings and 1:1 counselling.
3. On the vertical axis are mean values of indicators relevant to KM2: the red squares indicate the percentage of mothers who think a newborn baby should be put to the breast immediately, and the green squares indicate the percentage of children born after the baseline who have been put to the breast immediately.

Figure 41 and Figure 42 then show positive relationships for other key dimensions of messages and practices: on ANC and nutrition. All these findings together confirm that there is a positive link between the multiple channels through which information was received, and positive changes in actual behaviour.

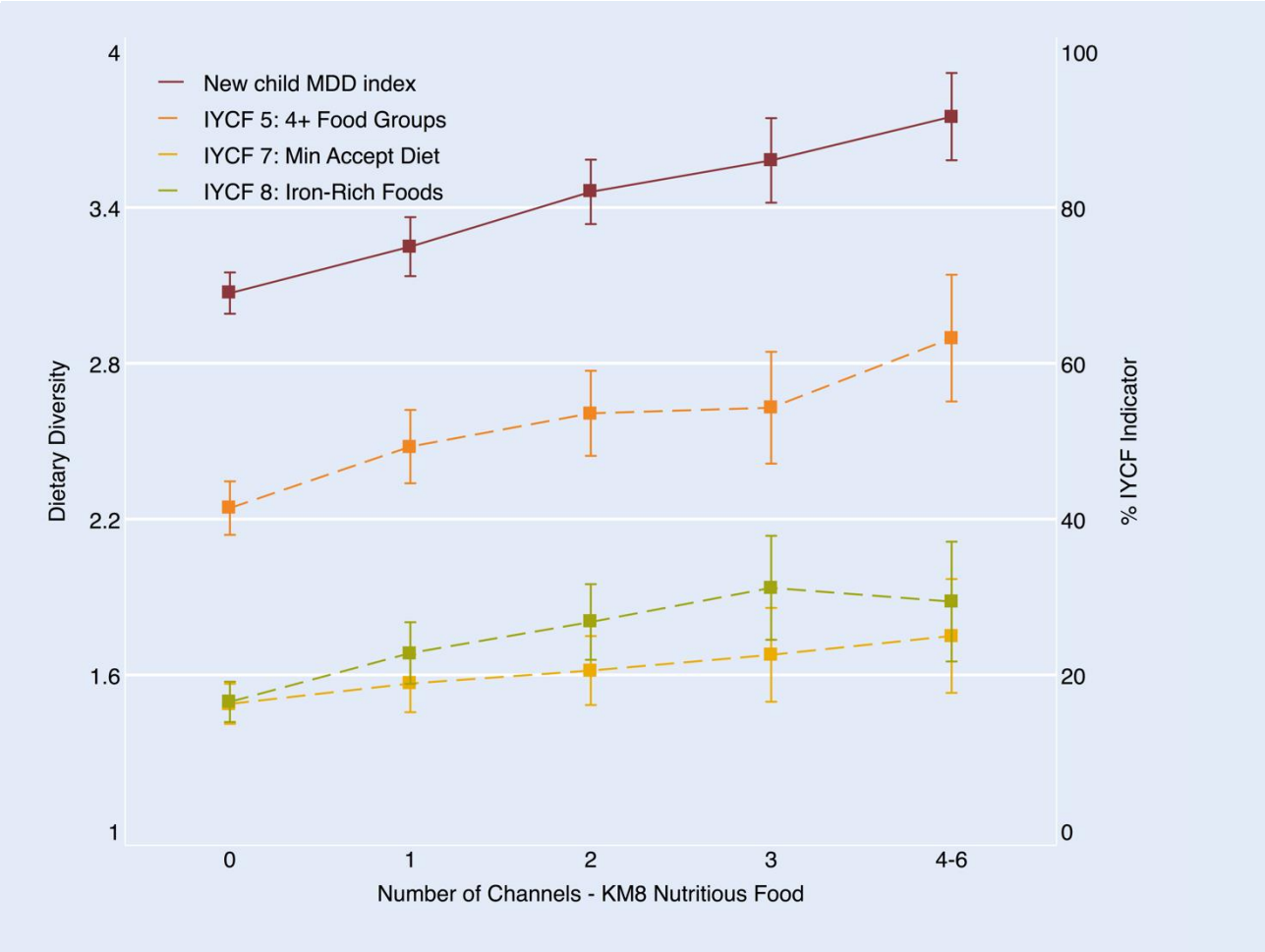
Figure 41: KM6: Exposure vs. knowledge and practices



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The horizontal axis indicates the intensity of the exposure to KM6 (Attend ANC) in the BCC – represented by the number of channels the woman recalls having received communications about the message. Channels are posters, radio programmes/ads, health talks, SMS/pre-recorded messages on mobile, small group meetings and 1:1 counselling.
3. On the vertical axis are mean values of indicators relevant to KM6: the red squares indicate the percentage of mothers who think a pregnant woman should visit the health facility to receive ANC even if she is healthy, and the green squares indicate the percentage of children born after the baseline who have received ANC.

Figure 42: KM8: Exposure vs. knowledge and practices



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The horizontal axis indicates the intensity of the exposure to KM8 (Ensure you buy nutritious foods when you are buying food for your family) in the BCC – represented by the number of channels the woman recalls having received communications about the message. Channels are posters, radio programmes/ads, health talks, SMS/pre-recorded messages on mobile, small group meetings and 1:1 counselling.
3. On the vertical axes are mean values of indicators relevant to KM8: the red squares indicate the level of the MDD dietary diversity index for the children born after the baseline (unit of measurement on the left axis, see notes to Table 16), while the other squares indicate prevalence of IYCF indicators relative to the nutrition of children born after the baseline (unit of measurement on the right axis; see
4. Table 15 and Volume II for the definition of these indicators).

7 Impact of the CDGP on household demographics, poverty, expenditure, food security and sanitation

Key findings

We find that **the percentage of women who gave birth to any child between baseline and midline is higher in CDGP communities compared to non-CDGP communities**. This in turn means that the number of biological children born after the baseline is slightly larger in CDGP communities compared to non-CDGP communities.

This finding may be due to a number of factors, and at present we cannot determine what the leading cause is. On the one hand, it may be that the size of the transfer relative to incomes provides an incentive for women to become pregnant in order to receive transfers. This would represent a fertility effect of the CDGP, which would be an unintended consequence of the programme. Alternatively, the programme may incentivise women to bring forward pregnancies that they had planned to have anyway. This would not represent an overall fertility effect of the programme, but would simply mean that CDGP had altered the timing of those pregnancies. An alternative explanation is that the CDGP has contributed to healthier pregnancies, leading to a greater number of healthy births among all pregnancies in CDGP areas compared with non-CDGP areas.

Turning to expenditure, our findings show that **CDGP leads to a substantial increase in monthly household expenditure**. This is in line with the expectations contained in the ToC for the programme. We find that monthly household food expenditure increases by NGN 3,200. This increase alone represents more than 90% of the size of the CDGP transfer. CDGP also leads to an increase in total monthly household expenditure that is greater than the size of the transfer. This finding is consistent with the result presented earlier that, including the CDGP transfers, monthly household earnings increase by more than the transfer amount in CDGP areas. That is to say that the income multiplier which we observe translates into increases in household expenditure that are also greater than the transfer value.

The three largest items in the food expenditure basket in the household in our sample are food made from grains, meat and eggs, and oils and butter. We find large impacts in the expenditure in the first two categories but not on the third, which indicates that households are spending more on nutritious foods. In terms of the impacts of the programme on non-food expenditures, we find significant impacts for clothing and they are especially large in terms of children's clothing.

The CDGP has had large and positive impacts on household food security across all seasons, and these impacts are larger in the seasons where hunger is more prevalent. We also find evidence of a **reduction in overall household poverty due to CDGP**, as measured by the Progress out of Poverty Index (PPI) scores. These effects appear to be strongest for households that had a lesser incidence of poverty to begin with.

It does not appear that CDGP is associated with improvements in sanitation. There is no impact of CDGP on households' source of drinking water, and only a weakly significant impact on the percentage of households with an 'improved' toilet facility.

7.1 Household demographics

In this section we first describe the composition of households for the sample used throughout this report (i.e. households containing at least one woman who was pregnant at baseline). Table 18 shows that more than one-quarter of household members are under 6 and more than half are under 18 years old. In addition, 12% of household members are aged 65 and above. This distribution of ages is typical of a young and growing population, exhibiting high rates of fertility.

Table 18: Household age composition for households containing at least one woman who was pregnant at baseline

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Mean member age	3688	18.5	1051	**17.8**	2174	**17.3**	**-0.54****	-0.14
		(5.4)		(5.4)		(5.3)	(0.22)	(0.26)
% in age group:								
0–5 Years	3688	25.9	1083	**27.0**	2249	**28.0**	**1.01***	0.32
		(15.1)		(13.6)		(13.5)	(0.54)	(0.66)
6–12 Years	3688	18.9	1083	**18.7**	2249	**18.5**	-0.12	-0.68
		(15.6)		(14.2)		(14.1)	(0.52)	(0.60)
13–17 Years	3688	9.14	1083	**6.86**	2249	**6.33**	-0.46	-0.07
		(13.05)		(9.08)		(8.81)	(0.35)	(0.40)
18–64 Years	3688	44.8	1083	**35.0**	2249	**35.1**	0.06	-0.71
		(18.9)		(15.0)		(15.6)	(0.60)	(0.73)
65+ Years	3688	1.3	1083	**12.5**	2249	**12.1**	-0.48	1.14
		(4.5)		(21.0)		(21.4)	(0.80)	(0.90)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 18 also shows that at midline households in CDGP communities had a larger proportion of children aged 0–5 compared to households in non-CDGP communities. Additionally, the mean age in households in CDGP communities is about half a year lower than households in non-CDGP communities. This suggests that the CDGP may have had an effect on the number of infants born to women in CDGP areas, which we now investigate further.

To do this, we focus on a slightly different estimation sample than we have used for most of the results in this report. For most of our analysis we have focused on households where the index woman was pregnant at baseline (amounting to approximately two-thirds of our sample). In this subsection, however, to analyse the effect of the CDGP on fertility we look at both households with at least one pregnant women at baseline and the remaining households in our sample (i.e. households where our sampled woman was not pregnant at baseline[24]).

[24] Note that these women were selected because they were identified as being highly likely to become pregnant over the course of the evaluation based on their characteristics such as age, marital status, number of children, etc.

In Table 19, we consider the percentage of women who gave birth to any child between baseline and midline, the number of biological children of the woman (including those not living in the household anymore) born after the baseline, and the spacing between a child born after the start of the CDGP (i.e. born after the baseline) and a previous child born to the index woman (in months). We look at this for women who were not pregnant at the time of the baseline and women who were pregnant at baseline separately. This is because if the introduction of the CDGP generated incentives for women to become pregnant in order to receive transfers, we would be more likely to see this effect for women who were not already pregnant at the time of the baseline. The first panel shows that more than 60% of women not pregnant at baseline became pregnant and gave birth between baseline and midline, both in CDGP and non-CDGP areas. This is a high number but not surprising since the sample was designed to include women likely to become pregnant.

What is interesting is that, as a result of the CDGP, we find an increase in the percentage of women giving birth to a biological child between baseline and midline from 62% to 65%. As a result, there is an increase in the average number of biological children born in this two-year period to these women from 0.72 to 0.76 (both in the CDGP and in the non-CDGP communities some women gave birth to more than one child during this period). These differences are not statistically significant; however, they become statistically significant once we control for baseline characteristics.

Baseline controls are useful even in experimental evaluations such as this, because they help improve any underlying imbalances resulting from the randomisation and improve precision. As we saw in the baseline report, we have very few imbalances between the characteristics of women and households in the CDGP and non-CDGP areas before the programme started – and certainly not more than we would expect to occur by chance. Furthermore, for the other results presented in this report it does not make a difference whether we control for baseline characteristics or not. However, this is one instance where our results become more precise and where there are moderate changes in the point estimates, so we believe it is important to report these as well. The estimates that control for baseline characteristics indicate that there are clear increases in the number of children born to women in CDGP areas. Once controlling for baseline characteristics, we see that the CDGP leads to an extra seven children per 100 women in the two years between baseline and midline. This is because a woman not pregnant at baseline is six percentage points more likely to give birth if in a CDGP community.

Looking at the second panel in Table 19 we see that the differential fertility responses between women in CDGP and non-CDGP areas are observed even among women who were pregnant at baseline. This effect is smaller than for those who were not pregnant at baseline, but it is still substantial and statistically significant.

At present we are not able to disentangle the possible causes of this effect of CDGP. One possibility is that the programme has had an unintended effect on fertility by providing an incentive for women to become pregnant, in order to receive transfers. Alternatively the reason for this change could be that women have taken advantage of the timing of the CDGP programme in their communities to bring forward pregnancies that they had planned to have anyway, in order that they might benefit from the programme. This would not reflect an overall fertility effect if families are simply altering the timing of pregnancies they had already planned to have, the overall number of children per women would not be expected to change over her lifetime. A final hypothesis is that the programme may have contributed to women having healthier pregnancies through its effect on dietary practices and health seeking behaviour, leading to a higher proportion of pregnancies resulting in healthy births in CDGP areas.

Table 19: Effect of the CDGP on the number of births per woman

	Midline				Effect of CDGP†	Adjusted Effect of CDGP†
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Women who were <u>not pregnant</u> at baseline						
% of women who gave birth to any child between baseline and midline	496	**61.7**	1062	**64.9**	3.19	**5.63****
					(3.02)	(2.67)
Number of biological children of the index woman (including those not living in the household anymore) born after the baseline	496	**0.72**	1062	**0.76**	0.04	**0.07****
		(0.51)		(0.54)	(0.03)	(0.03)
Spacing between child born after the start of the CDGP (i.e. born after the baseline) and previous child born to index woman (in months)	282	**31.8**	654	**31.2**	-0.71	-0.04
		(9.0)		(11.5)	(0.64)	(0.53)
Women who were <u>pregnant</u> at baseline						
% of women who gave birth to any child between baseline and midline	1051	**84.8**	2174	**87.2**	**2.38***	**2.38***
					(1.35)	(1.34)
Number of biological children of the index woman (including those not living in the household anymore) born after the baseline	1051	**1.06**	2174	**1.08**	**0.03***	**0.03***
		(0.43)		(0.41)	(0.01)	(0.01)
Spacing between child born after the start of the CDGP (i.e. born after the baseline) and previous child born to index woman (in months)	732	**33.4**	1575	**33.6**	0.03	-0.26
		(12.8)		(13.0)	(0.58)	(0.48)

Source: CDGP baseline and midline data. Notes:

1. The sample in this table is different from most other tables in this report. The top panel considers households where the woman was not pregnant at the time of the baseline survey in 2014, while the bottom panel considers those households where the woman was pregnant. In both cases, we interviewed this woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

†This table presents effects adjusted in two different ways. The second-to-last column contains the effects of the CDGP adjusted only to take into account LGA-specific characteristics, as is done for most other tables in this report. The last column instead shows the effects adjusted for a set of household composition characteristics at baseline: number of children aged 0–2 in the household, number of children aged 3–5 in the household, dummies for the index woman's spacing since the last birth (no previous births, gave birth in 6 months before baseline interview, gave birth 6–12 months before baseline interview, gave birth 12–24 months before baseline interview, gave birth more than 24 months before baseline interview).

7.2 Household assets and expenditure

Table 20 shows the impacts of participating in the CDGP on household expenditure. We expect that participating in the programme results in a substantial increase in household expenditure and this is indeed what happens. Monthly household food expenditure increases by NGN 3,200, which is more than 90% of the size of the CDGP transfer. Total household expenditure increases by more than the total value of the transfer. In addition to the increase in food expenditure, there is also a large increase in non-food expenditure in the household, as well as a small increase in expenditure on durables.[25] This is in line with the results presented earlier, which show that there was an increase in the income of these households by an amount larger than the transfer. We should stress that this is a remarkable result. Close to the entire transfer amount is being spent on

[25] For example, tables, mattresses, stoves, motorbikes, ploughs, etc.

food, and at the same time there was a substantial increase in non-food expenditure. Moreover, Table 20 also shows that these results are valid regardless of whether we use in the analysis the level of expenditures, log level of expenditures (omitting households with zero expenditures in each component) or equivalised expenditures.[26]

The two panels of
Figure 43 show that the largest expenditure impacts appear to be at the top of the distribution of food and total expenditure. This means that not only are the distributions of food and total expenditures shifted toward higher levels of expenditures as a result of participation in the programme, inequality in total expenditure also increases. In other words, the CDGP increases inequality in total expenditure because the effect on expenditure was biggest for people who were already spending the most (i.e. those who were richer). Looking at equivalised food expenditures, the impact of the CDGP is increasing across the distribution. Again, this shows that the programme had a bigger impact on food and total expenditure for those who were already spending more (i.e. those who were richer). The estimated effect at the top of the distribution (i.e. the richest 10%) is around five times the effect at the bottom (the poorest 10%), and more than double the effect at the median (those in the middle).[27] There is a similar pattern when we focus on total expenditure, although there is not much difference in the effect size of the CDGP for people in the top 50%.[28]

Table 20: Expenditure aggregates

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Monthly expenditure – '000 NGN‡								
Food+	3626	8.4	867	**19.0**	1763	**22.3**	**3.32*** **	-0.24
		(12.0)		(17.9)		(18.2)	(1.10)	(1.37)
Non-food++	3196	13.0	753	**21.5**	1565	**23.5**	**2.05***	1.76
		(15.3)		(21.3)		(21.4)	(1.07)	(1.50)
Durables+++	3672	0.41	1036	**0.75**	2127	**0.89**	**0.16***	0.09
		(1.52)		(2.04)		(2.05)	(0.09)	(0.11)
Total++++	3668	20.2	1031	**32.7**	2133	**37.5**	**4.55****	0.86
		(24.5)		(35.9)		(37.6)	(1.78)	(2.49)
Total (only complete observations)++++	3163	21.8	727	**40.8**	1489	**45.9**	**5.46*****	1.93
		(23.7)		(34.2)		(33.4)	(2.10)	(2.67)
(Log) monthly expenditure‡‡								
Food+	3281	8.44	859	**9.41**	1755	**9.67**	**0.26*****	-0.05
		(1.26)		(1.08)		(0.93)	(0.06)	(0.07)
Non-food++	3080	8.93	751	**9.51**	1560	**9.66**	**0.15*****	0.09
		(1.18)		(1.05)		(0.99)	(0.05)	(0.07)
Durables+++	1319	5.55	567	**6.05**	1206	**6.28**	**0.25****	-0.01
		(1.83)		(1.65)		(1.70)	(0.10)	(0.12)
Total++++	3548	9.31	905	**10.00**	1861	**10.19**	**0.17*****	-0.03
		(1.27)		(1.27)		(1.24)	(0.06)	(0.07)

[26] Equivalisation is a technique that provides an estimate of expenditure per person, except children and additional adults in households are not counted as a 'whole' person to account for the fact that there are some fixed costs within households and children consume less than adults. Therefore, in equivalisation the members of a household receive different weightings. Total household expenditure is then divided by the sum of the weightings to yield a representative income. The Organisation for Economic Co-operation and Development (OECD) equivalence scale gives a weight of 1.0 to the first adult, 0.7 to the second and each subsequent person aged 14 and over and 0.5 to each child aged under 14.
[27] All these differences are statistically significant at the 5% confidence level.
[28] The difference between the effect at the median and the effect at the first decile is statistically significant.

Total (only complete observations)++++	3128	2.56	726	**3.36**	1489	**3.55**	**0.19*** **	0.03
		(1.16)		(0.90)		(0.81)	(0.05)	(0.06)
Monthly equivalised expenditure – '000 NGN‡‡‡								
Food+	3618	1.96	873	**4.01**	1763	**4.76**	**0.75*** **	-0.12
		(2.72)		(3.76)		(3.99)	(0.21)	(0.27)
Non-food++	3190	2.96	757	**4.57**	1566	**4.80**	0.25	0.31
		(3.36)		(4.68)		(4.20)	(0.25)	(0.32)
Durables+++	3662	0.09	1038	**0.16**	2139	**0.20**	**0.05** **	0.01
		(0.32)		(0.47)		(0.49)	(0.02)	(0.03)
Total++++	3687	4.57	1046	**6.81**	2169	**7.54**	**0.66***	0.08
		(5.11)		(7.22)		(7.16)	(0.36)	(0.46)
Total (only complete observations)++++	3163	4.99	726	**8.44**	1489	**9.44**	**1.08*** **	0.31
		(5.11)		(6.92)		(6.64)	(0.41)	(0.50)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

‡Values above the 99th percentile are put to missing. This includes zeros for households who report no expenditure.

‡‡ Values above the 99th percentile and zero values are put to missing.

‡‡‡Values correspond to monthly expenditure values divided by the OECD household equivalence scale. The scale takes the following values: ES = 1 + 0.7*((number of adults aged 14 or above) – 1) + 0.5*(number of children under 14 years)

+Monthly food expenditure is projected by reference to expenditure on food items in the seven days prior to the survey.

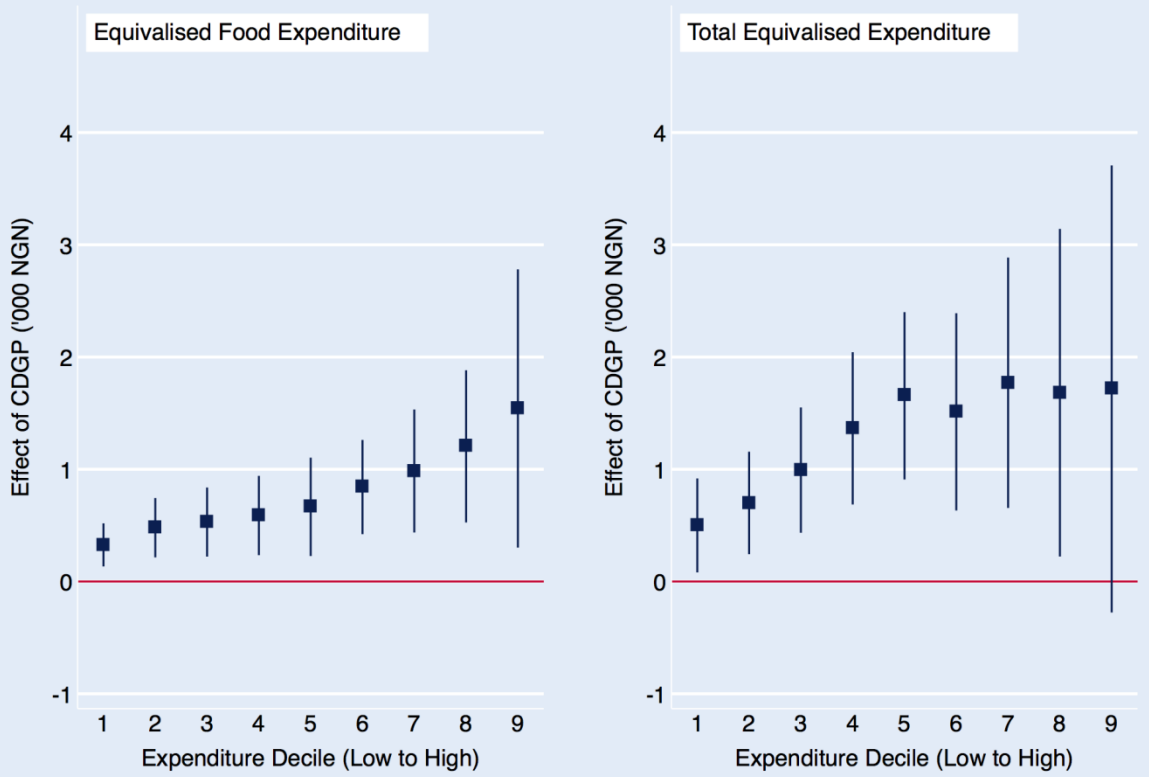
++Monthly non-durable expenditure is projected using:

- seven-day recall regarding consumable items (e.g. petrol, fuel, phone credit, cigarettes);
- 30-day recall regarding a different list of items (e.g. toiletries, clothing, utensils);
- annual expenditure on larger items (e.g. dowry, marriage, funeral, school expenses, books).

+++Monthly durable expenditure is the sum of the reported annual expenditure on assets (e.g. table, mattress, stove, motorbike, plough etc.).

++++The first 'Total' row sums food, non-food, and durables expenditures considering all households for which at least one of the three is not missing in the data. The second 'Total' row instead considers only those households for which we observe all three categories.

Figure 43 Effect of the CDGP on the quantiles of the expenditure distribution



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The chart depicts the effect of the CDGP on different deciles of the distribution of expenditure. For example, if the effect on the 5th decile (i.e. the median) of expenditure is NGN 1,000, it means that the median of the distribution has been shifted upwards by NGN 1,000 due to the CDGP.
3. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval. Estimates for the first decile are not reported, because of zero values for earnings in the lower tail of the distribution.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.
5. See notes to Table 20 for definitions of the indicators.

In Table 21, Table 22 and Figure 44 we document the programme impacts on different components of food expenditure in the seven days prior to the survey. The three largest items in the food expenditure basket in the households in our sample are food made from grains, meat and eggs, and oils and butter. There are large impacts in the expenditure on the first two categories but not on the third, which indicates that households are spending more on nutritious foods in particular. We also see that, with the exception of a few components such as oils and butter, there are increases in expenditures across several different components of food expenditure. These results match up quite closely to what was documented in an earlier section on the drivers in the improvements in the food diversity scores.

Table 21: Food expenditure: Percentage of households buying foods from different food groups

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of households spending anything in the past seven days on:								
Foods made from grains	3681	4575.0	888	**66.8**	1797	**76.0**	**8.37*** **	-3.53
							(2.55)	(2.90)
Dark green leafy vegetables	3678	37.9	889	**42.2**	1798	**46.0**	3.35	2.44
							(2.88)	(3.27)
Potatoes and roots	3682	18.9	889	**42.3**	1797	**51.0**	**8.29*** **	2.34
							(2.76)	(3.04)
Other vegetables	3680	43.1	888	**70.3**	1798	**71.0**	0.47	0.20
							(2.82)	(3.39)
Fruit	3684	10.6	888	**40.9**	1795	**52.4**	**10.77*** **	-1.82
							(2.69)	(2.82)
Nuts and beans	3676	29.5	888	**34.8**	1795	**38.4**	4.08	1.17
							(2.61)	(3.00)
Meat and eggs	3681	44.5	887	**63.1**	1792	**74.3**	**12.06*** **	-0.68
							(2.23)	(2.58)
Fish	3682	28.8	888	**46.6**	1796	**55.7**	**8.10*** **	3.78
							(2.90)	(3.20)
Milk, cheese and yoghurt	3676	27.7	888	**47.0**	1794	**56.1**	**9.64*** **	-2.67
							(2.71)	(2.97)
Oils and butter	3680	59.5	887	**87.0**	1796	**87.8**	0.22	-1.98
							(1.70)	(2.05)
Condiments for flavour	3675	57.7	885	**61.5**	1792	**67.8**	**7.04*** **	-1.13
							(2.25)	(2.65)
Sugary foods and sweets	3674	18.2	884	**43.9**	1793	**52.6**	**8.24*** **	-1.66
							(2.28)	(2.83)
Drinks	3672	5.5	873	**25.1**	1786	**29.7**	**4.66***	2.55
							(2.44)	(2.87)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 22: Food expenditure: Amount spent on different food groups

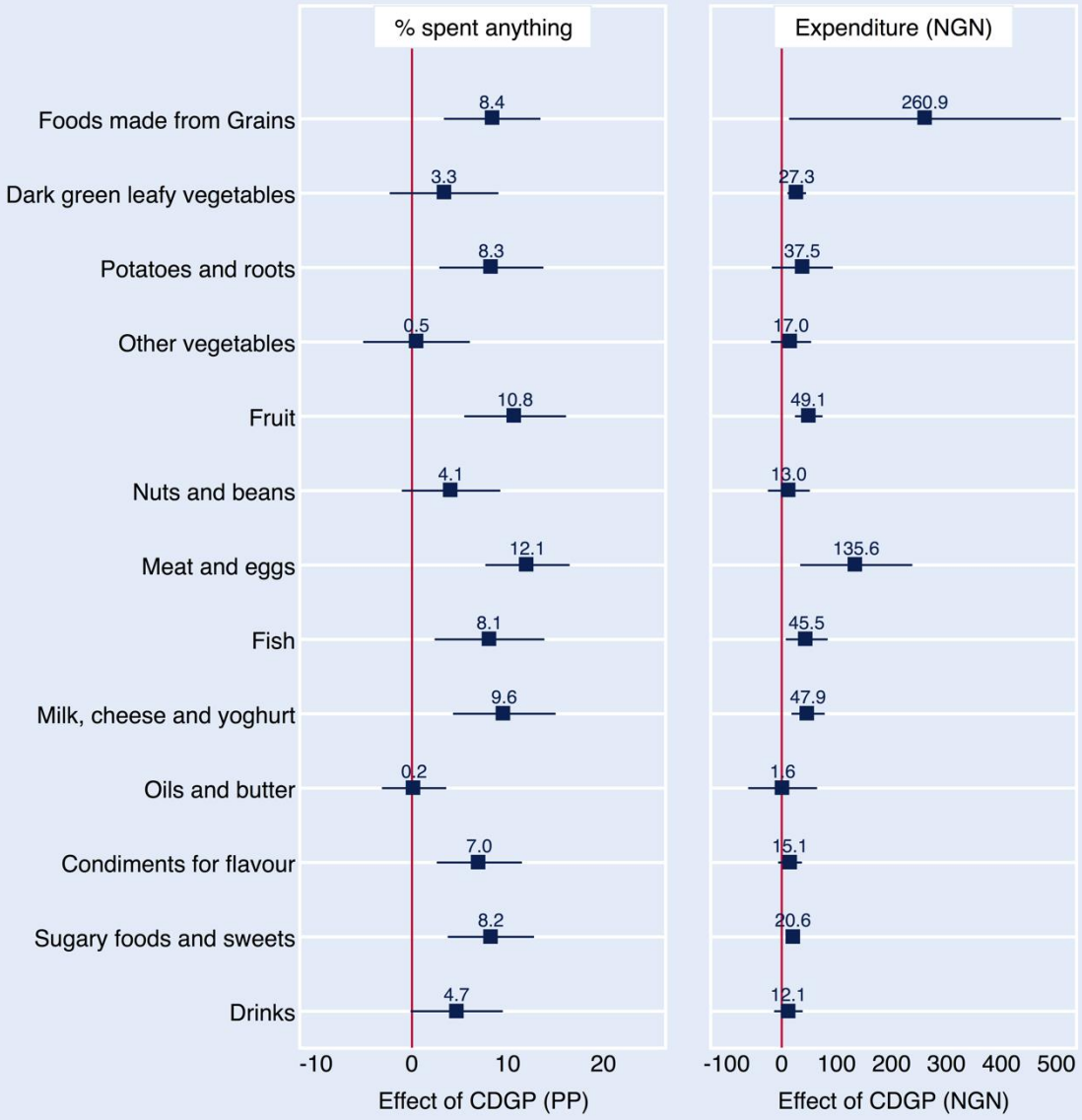
	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Expenditure in the past seven days (NGN) †								
Foods made from grains	3565	661.4	868	**1477.7**	1766	**1771.7**	**277.69****	-143.09
		(1436.0)		(2034.0)		(2202.2)	(121.67)	(154.58)
Dark green leafy vegetables	3657	50.7	881	**80.7**	1779	**107.7**	**26.10*****	11.86
		(109.8)		(149.7)		(188.0)	(8.48)	(11.98)
Potatoes and roots	3646	75.7	873	**305.5**	1768	**343.7**	37.50	18.37
		(255.1)		(586.0)		(599.7)	(28.19)	(31.35)
Other vegetables	3598	112.9	866	**223.2**	1767	**240.0**	15.10	3.97
		(217.5)		(269.3)		(292.8)	(14.77)	(18.33)
Fruit	3660	23.0	871	**125.9**	1767	**178.4**	**49.13*****	-0.21
		(100.3)		(232.4)		(267.0)	(12.74)	(14.89)
Nuts and beans	3637	97.8	877	**154.2**	1780	**161.4**	7.69	-5.17
		(287.5)		(391.0)		(360.9)	(18.94)	(19.74)
Meat and eggs	3587	367.5	859	**711.4**	1763	**831.0**	**135.63*****	2.20
		(748.7)		(989.0)		(962.4)	(51.75)	(67.99)
Fish	3614	88.6	871	**205.1**	1756	**250.3**	**42.65****	14.87
		(204.8)		(316.6)		(332.0)	(16.74)	(20.53)
Milk, cheese and yoghurt	3640	57.0	879	**157.6**	1764	**200.5**	**42.13*****	-23.80
		(145.2)		(275.1)		(285.1)	(14.50)	(18.65)
Oils and butter	3598	188.7	865	**556.2**	1749	**570.2**	10.46	-18.26
		(293.8)		(562.6)		(537.8)	(28.55)	(34.28)
Condiments for flavour	3601	83.4	868	**182.5**	1753	**190.4**	9.32	-7.69
		(124.0)		(250.0)		(234.3)	(10.72)	(13.04)
Sugary foods and sweets	3646	18.2	875	**66.2**	1769	**87.0**	**20.57*****	-1.54
		(59.7)		(114.4)		(135.3)	(5.58)	(7.79)
Drinks	3666	17.4	864	**95.6**	1776	**108.8**	12.12	21.57
		(107.4)		(240.0)		(254.6)	(13.19)	(16.45)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

†Values above the 99th percentile are put to missing. This includes zeros for households who report not spending anything on each food group.

Figure 44: Effect of the CDGP on household food expenditure in the past seven days

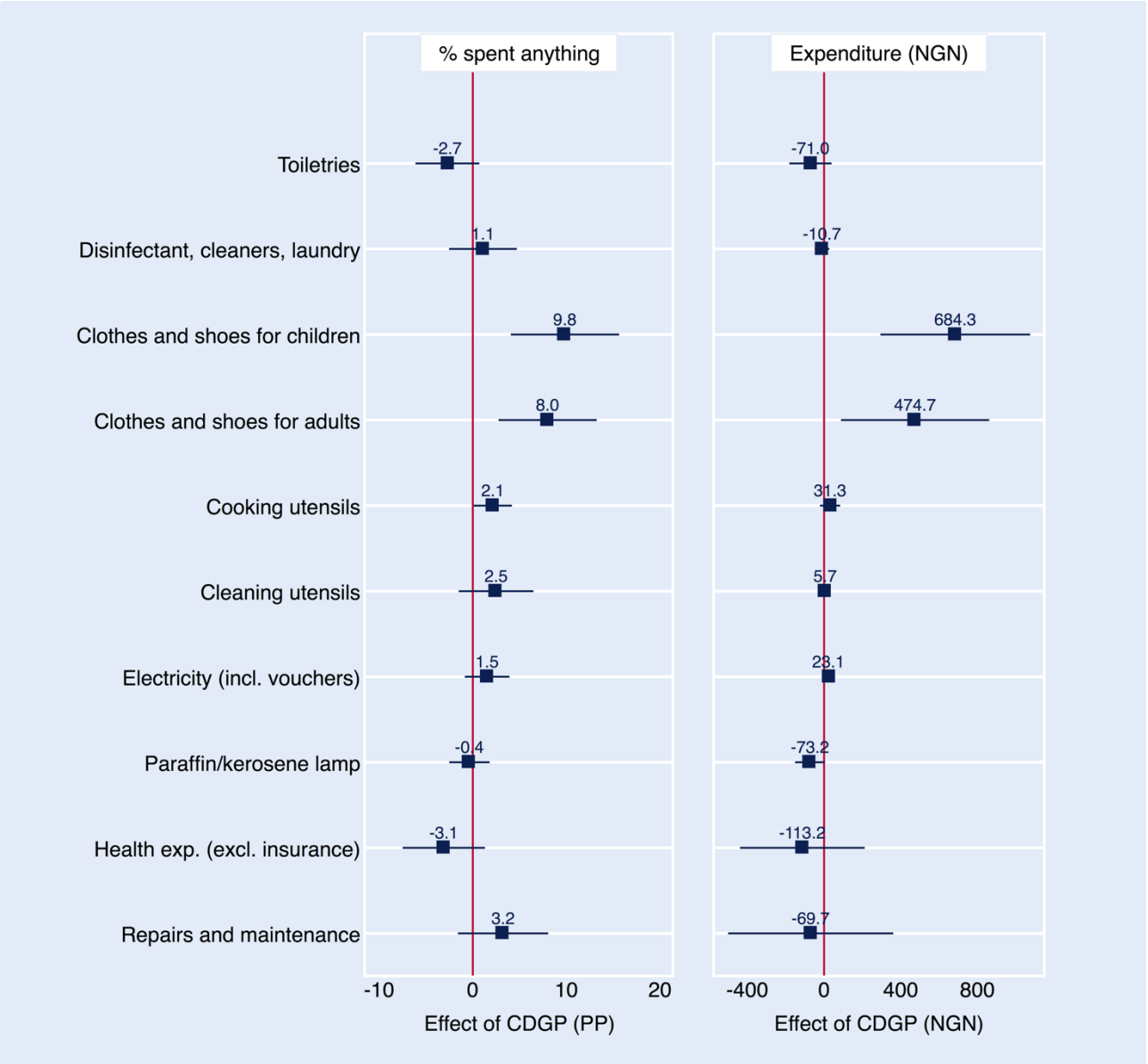


Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Panels show the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
3. Effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

In Figure 45 we examine the impacts of the programme on different components of non-food expenditures (in the past 30 days). There are positive impacts across different categories but they are only statistically significant for clothing, and they are especially large in terms of children's clothing.

Figure 45: Effect of the CDGP on household non-food expenditure in the past 30 days



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Panels show the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
3. Effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

7.3 Food security

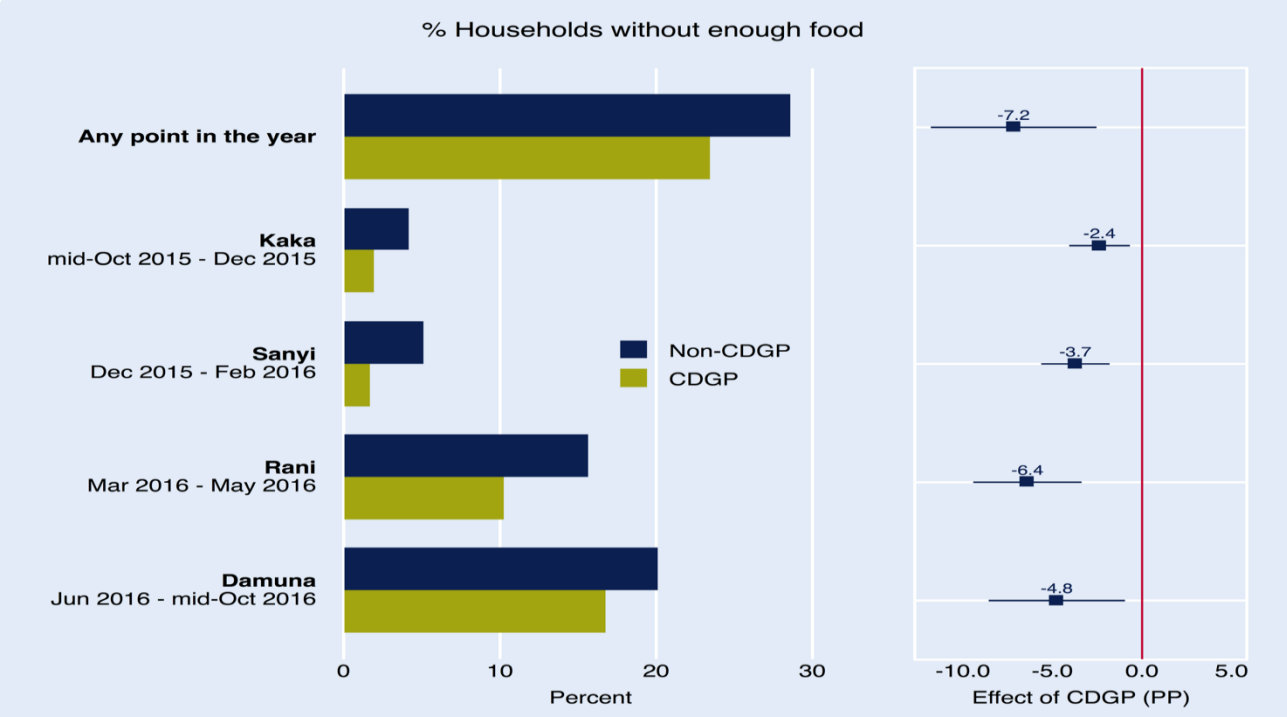
In this section we study the impacts of the CDGP on reported food security at the household level. Respondents are asked whether their household did not have enough food at any point during the previous year, and then by season. Mirroring the results on food expenditure, Figure 46 shows that there are positive impacts on household food availability across all seasons and that these impacts are larger in the seasons when hunger is more prevalent. Together with the findings from the qualitative midline, this suggests a link between the improvements in dietary diversity highlighted in

Section 6.2 and the effects of the CDGP on food security: the grant allows recipients to purchase more foods that are not produced in their community, thereby both reducing the seasonal variation in food diversity and smoothing food availability throughout the year (Sharp & Cornelius, 2017, p. 38).

The improvements in food security throughout the year are reflected in a reduced need to rely on coping mechanisms. Figure 47 shows the effect of the CDGP on the incidence of the most common coping mechanisms cited by respondents in cases where they did not have enough food. The CDGP has reduced households' need for external assistance, e.g. from family and friends or by borrowing money. It has also significantly decreased the instances where family members had to take on more work or move away from the community to find work in order to be able to cope with food shortages.

Table 23 shows the impact of the CDGP on the Household Hunger Scale (HHS), a measure of short-term food deprivation. CDGP households were less likely to report that there was ever no food to eat of any kind in their household because of lack of resources in the 30 days prior to the CDGP midline interview. They were also less likely to report that a household member went to sleep hungry because there was not enough food. This translated to 3% of households moving from 'Moderate Hunger' to 'Little to No Hunger' on the HHS.

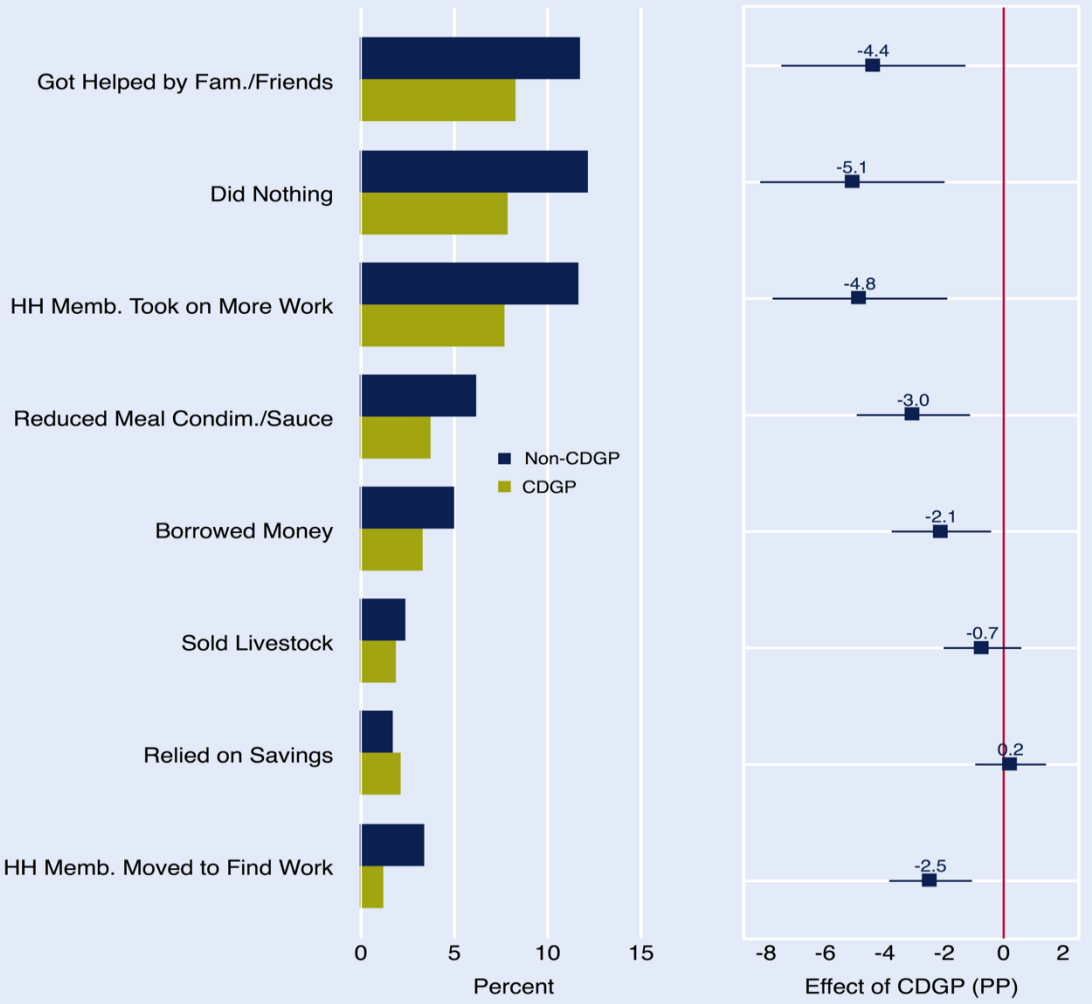
Figure 46: Effect of the CDGP on household food availability



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Figure 47: Effect of the CDGP on household coping mechanisms



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Table 23: Household hunger

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
A – In the past 30 days, was there ever no food to eat of any kind in your household because of lack of resources to get food?								
Yes (%)	3688	15.0	1009	**16.6**	2109	**12.5**	**-4.97****	**3.97***
							(1.62)	(2.03)
B – In the past 30 days, did you or any household member go to sleep at night hungry because there was not enough food?								
Yes (%)	3688	8.3	1009	**8.2**	2109	**6.0**	**-2.49****	1.08
							(1.20)	-1.34
C – In the past 30 days, did you or any household member go a whole day and night without eating anything at all because there was not enough food?								
Yes (%)	3688	5.0	1009	**3.6**	2109	**2.9**	-0.78	0.57
							(0.79)	(0.92)
D – In the past 30 days, did you ever reduce the number of meals you ate per day because there was not enough food?								
Yes (%)	3688	17.3	1009	**24.3**	2109	**17.7**	**-7.78****	2.90
							(2.20)	(2.39)
HHS[+]	3688	0.30	1009	**0.32**	2109	**0.24**	**-0.09****	0.07
		(0.79)		(0.79)		(0.70)	(0.04)	(0.04)
% experiencing little to no household hunger (HHS = 0 or 1)	3688	91.5	1009	**91.0**	2109	**93.6**	**3.03****	-0.98
							(1.28)	(1.44)
% experiencing moderate household hunger (HHS = 2 or 3)	3688	8.0	1009	**8.3**	2109	**5.7**	**-2.97****	0.66
							(1.19)	(1.34)
% experiencing severe household hunger (HHS = 4, 5, or 6)	3688	0.6	1009	**0.7**	2109	**0.7**	-0.06	0.32
							(0.35)	(0.39)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

[+]The HHS is calculated using questions A, B, and C above. A score of 0 for each of these questions is attributed if the respondent reports 'No' to the main question, a score of 1 is attributed if the respondent reports 'Rarely' or 'Sometimes' to the following question, and a score of 2 is attributed for 'Often'. The scores are then added together to obtain the HHS, which therefore ranges from 0 to 6.

The HHS is a short-term acute indicator of food security because it has a 30-day recall period. It can therefore change from season to season. Baseline results should not be compared directly with the midline results because the midline interviews were done a few weeks later in the year than the baseline. The value here is in comparing CDGP and non-CDGP communities at midline.

7.4 Household drinking water and sanitation

In this section we look at the effect of the CDGP on households' access to clean drinking water and toilet facilities. We find that the CDGP did not have a significant effect on households' source of drinking water and there was a small increase in the percentage of households with an 'improved' toilet facility, although the result is only weakly significant and access levels are still low

(15% in non-CDGP communities compared with 20% in CDGP communities had access to an 'improved' toilet).

Table 24: Water and sanitation

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Main source of drinking water								
% using tubewell/borehole	3688	32.7	1051	**37.5**	2172	**45.1**	5.90	8.65
							(4.91)	(6.42)
% using unprotected dug well	3688	29.0	1051	**24.3**	2172	**23.6**	0.31	-3.24
							(3.96)	(4.36)
% using public tap/standpipe	3688	14.2	1051	**9.8**	2172	**9.2**	-0.74	0.02
							(1.77)	(2.00)
% using surface water	3688	8.3	1051	**11.4**	2172	**5.8**	-4.79	3.49
							(3.06)	(2.70)
% using protected dug well	3688	6.4	1051	**9.6**	2172	**8.1**	-1.75	**-4.93****
							(2.26)	(1.97)
% using piped water to yard/plot	3688	1.7	1051	**5.0**	2172	**5.1**	0.14	-2.64
							(1.82)	(2.39)
% using other sources	3688	7.7	1051	**2.5**	2172	**3.3**	0.93	-1.34
							(1.69)	(1.93)
% of households with improved water source[+]	3688	59.9	1051	**62.1**	2172	**68.9**	4.62	0.89
							(3.87)	(4.43)
Type of toilet used by household members								
% using pit latrine without slab/open pit	3688	74.1	1051	**71.7**	2172	**67.4**	**-4.72***	4.12
							(2.77)	(3.42)
% using no facilities / bush / field	3688	15.0	1051	**13.8**	2172	**12.9**	-0.08	-0.02
							(2.39)	(2.47)
% using pit latrine with slab	3688	7.9	1051	**13.7**	2172	**17.5**	3.53	-4.14
							(2.23)	(2.87)
% using other type of toilet	3688	3.0	1051	**0.9**	2172	**2.2**	**1.27****	0.04
							(0.62)	(1.17)
% of households with improved toilet facility[++]	3688	10.9	1051	**14.6**	2172	**19.6**	**4.70***	-4.09
							(2.46)	(3.44)
% with toilet facility for household members only	3136	76.5	906	**69.3**	1892	**72.0**	1.28	-2.10
							(2.30)	**(2.93)**

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

[+]'Improved' drinking water sources are: piped water into a dwelling, piped water into a yard/plot, public tap/stand/pipe, tubewell/borehole, protected dug well, protected spring, bottled/sachet water, and collected **rainwater (WHO and UNICEF, 2006)**. [++]Improved' toilet facilities are: a flush toilet, a ventilated improved pit latrine, a pit latrine with a slab, and a composting toilet **(WHO and UNICEF, 2006)**.

7.5 The Progress out of Poverty Index (PPI)

The PPI (Chen, Schreiner, & Woller, 2008) is a poverty measurement tool that was originally pioneered in Nigeria in 2003/04. It combines information from 10 questions about household composition, assets and dwelling features into an overall index ranging from 0 to 100 points, where households with a higher score are wealthier.[29] The index was updated in 2012/13 (Schreiner, 2015). The updated version some different questions to measure poverty and so results from the two versions of the PPI should not be directly compared. Using the new index, we see some significant improvement for CDGP households. Figure 48 shows a slight tendency for the impacts to be larger among households with higher scores to begin with. This suggests that the CDGP could lead to an increase in inequality because the effect of the CDGP is larger for those who were already relatively better off (as measured by the PPI).

Table 25: PPI

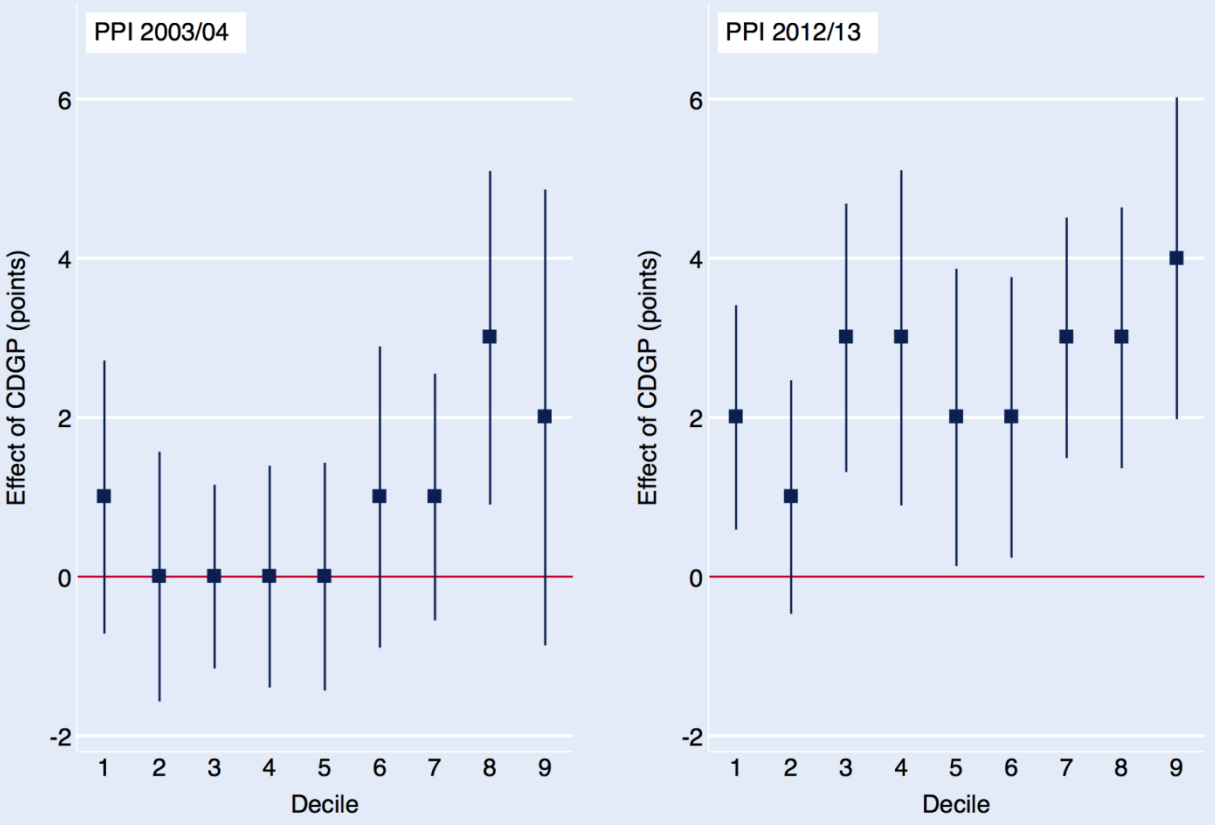
	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Household PPI score 2003/04	3688	27.2	1051	**26.0**	2174	**27.4**	1.17	-1.10
		(13.3)		(11.8)		(12.2)	(0.82)	(1.07)
Household PPI score 2012/13			1051	**38.5**	2174	**41.1**	**2.52*****	-1.37
				(11.9)		(12.3)	(0.70)	(0.89)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Details about the calculation of the indicators in this table are in Volume 2.

[29] For details on how this score is calculated, see Section 12 in Volume II.

Figure 48: Effect of the CDGP on PPI scores



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The chart depicts the effect of the CDGP on different deciles of the distribution of PPI. For example, if the effect on the 5th decile (i.e. the median) of the PPI is NGN 1,000, this means that the median of the distribution has been shifted upwards by NGN 1,000 due to the CDGP.
3. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval. Estimates for the first decile are not reported, because of zero values for earnings in the lower tail of the distribution.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Details about the calculation of the indicators in this table are in Volume 2.

8 Impact of the CDGP on women's nutritional status and wellbeing

Key findings

There are few differences in the anthropometrics of women in CDGP and non-CDGP communities. The only exception is that the MUAC of non-pregnant women in CDGP communities is 11 mm greater relatively to non-CDGP communities, providing some evidence that women in CDGP communities are somewhat better nourished.

In this section we also look at self-reported wellbeing, and find that women in CDGP communities report a higher level of subjective wellbeing compared to women in non-CDGP communities.

8.1 Women's nutritional status

In this section we document the impact of participation in the CDGP on the nutritional status and wellbeing of women (who were pregnant at the time of the baseline interview) as measured by anthropometrics measures (height, weight, Body Mass Index (BMI) and MUAC). We divide the sample into two groups: those not currently pregnant, and those who were pregnant at the time of the midline interview (Table 26). This is because pregnancy clearly affects anthropometric measurements. There are few differences in the anthropometrics of women in CDGP and non-CDGP communities, regardless of whether they are currently pregnant or not. The only exception is that the MUAC of non-pregnant women in CDGP communities is 11 mm greater relative to non-CDGP communities, providing some evidence that women in CDGP communities are somewhat better nourished.

Table 26: Women's anthropometrics

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Not pregnant at midline interview								
Weight	2005	54.6	645	**51.5**	1364	**54.9**	3.65	2.84
		(31.1)		(38.2)		(68.4)	(2.38)	(3.73)
Height	2005	157.5	645	**158.3**	1364	**160.8**	2.84	2.78
		(27.2)		(33.7)		(60.5)	(2.15)	(3.26)
BMI	2003	21.8	644	**20.3**	1357	**20.4**	0.13	-0.16
		(3.2)		(2.8)		(3.1)	(0.16)	(0.24)
% who are classed as thin (BMI<18)	2003	11.1	644	**26.6**	1357	**27.3**	0.49	0.84
							(2.21)	(2.69)
% who are classed as normal (18<BMI<25)	2003	75.6	644	**66.8**	1357	**64.6**	-2.00	-0.06
							(2.47)	(3.01)
% who are classed as overweight (BMI>25)	2003	13.3	644	**6.7**	1357	**8.1**	1.51	-0.78
							(1.42)	(2.02)
MUAC	2005	253.2	645	**265.9**	1364	**275.5**	**11.19***	3.96
		(39.0)		(99.9)		(133.0)	(5.94)	(10.20)
	2005	10.7	645	**7.6**	1364	**9.0**	1.22	-0.55

% who are classed as malnourished (Definition 1 *MUAC < 220)Def.1: MUAC < 220*							(1.31)	(1.52)
% who are classed as malnourished (Definition 1 *MUAC < 230)*	2005	22.3	645	**17.2**	1364	**19.1**	1.70	-2.14
							(1.91)	(2.23)
Pregnant at midline interview								
Weight	1106	54.1	364	**57.8**	743	**53.2**	-4.16	2.22
		(8.1)		(70.6)		(35.7)	(3.88)	(2.50)
Height	1106	157.3	364	**161.3**	743	**157.8**	-3.19	0.99
		(26.1)		(62.7)		(31.4)	(3.33)	(2.18)
BMI	1105	22.1	362	**21.4**	742	**21.1**	-0.21	0.25
		(3.1)		(3.0)		(3.0)	(0.20)	(0.24)
% who are classed as thin (BMI<18)	1105	7.1	362	**14.6**	742	**15.5**	0.36	-1.71
							(2.31)	(2.45)
% who are classed as normal (18<BMI<25)	1105	80.2	362	**75.4**	742	**75.3**	0.41	0.42
							(2.68)	(2.64)
% who are classed as overweight (BMI>25)	1105	12.8	362	**9.9**	742	**9.2**	-0.77	1.29
							(1.79)	(1.95)
MUAC	1106	249.1	364	**272.3**	743	**265.9**	-5.62	-2.13
		(28.1)		(124.6)		(114.9)	(7.92)	(7.55)
% who are classed as malnourished *Def.1: MUAC < 220*	1106	10.5	364	**7.1**	743	**9.4**	1.81	-1.53
							(1.66)	(1.97)
% who are classed as malnourished *Def.1: MUAC < 230*	1106	22.4	364	**18.7**	743	**19.6**	0.45	-2.14
							(2.42)	(3.01)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

8.2 Women's self-reported wellbeing

We also collected a measure of subjective wellbeing, using a 'ladder of life'. We showed respondents a picture of a ladder and explained that the bottom of the ladder (0) indicates the worst possible life and the top (10) indicates the best possible life. We then asked respondents to give an indication as to where they feel they are on this scale. Table 27 shows that, as a result of participation in the programme, there is an increase of 0.23 points on the wellbeing ladder, which is equivalent to 12% of a standard deviation.

Table 27: Women's self-reported assessment of their wellbeing

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Wellbeing scale	3687	4.61	1001	**5.49**	2097	**5.69**	**0.23*****	-0.05
		(1.83)		(1.95)		(2.00)	(0.08)	(0.11)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

9 Impact of the CDGP on child health and development

Key findings

The CDGP has led to investments in the health of children that go over and above nutrition. Specifically, the programme has led to statistically significant increases in the utilisation of the following vaccines: BCG, polio, measles, hepatitis B and yellow fever. CDGP children also are more likely to get deworming treatment, they are less likely to have injury and illnesses, they are less likely to have diarrhoea (although the incidence of diarrhoea is still very high) and they are more likely to receive adequate care when they do have diarrhoea. These factors are important for this evaluation as they are known to be associated with malnutrition.

For new children born *after* the start of the CDGP, we find that the programme has had a moderate impact on height-for-age and on the proportion of children stunted and severely stunted, which nevertheless remain at a very high level. For this same group, the CDGP has led to a decrease in weight-for-height. In other words, at any given age, children born *after* the start of the CDGP are taller in CDGP communities than in non-CDGP communities, but they are relatively thinner. This is not driven by a decrease in weight-for-age but rather by an increase in height-for-age as a result of the programme. It is possible that early improvements in nutrition contribute to an increase in a child's height, but a chronic lack of access to adequate nutrition in this area, even in CDGP areas, prevents children's weight gains from keeping up with their height gains. It is striking how there is no impact of the CDGP anywhere in the distribution of weight-for-age, in spite of statistically significant but moderate impacts on height-for-age and moderate reductions in stunting rates.

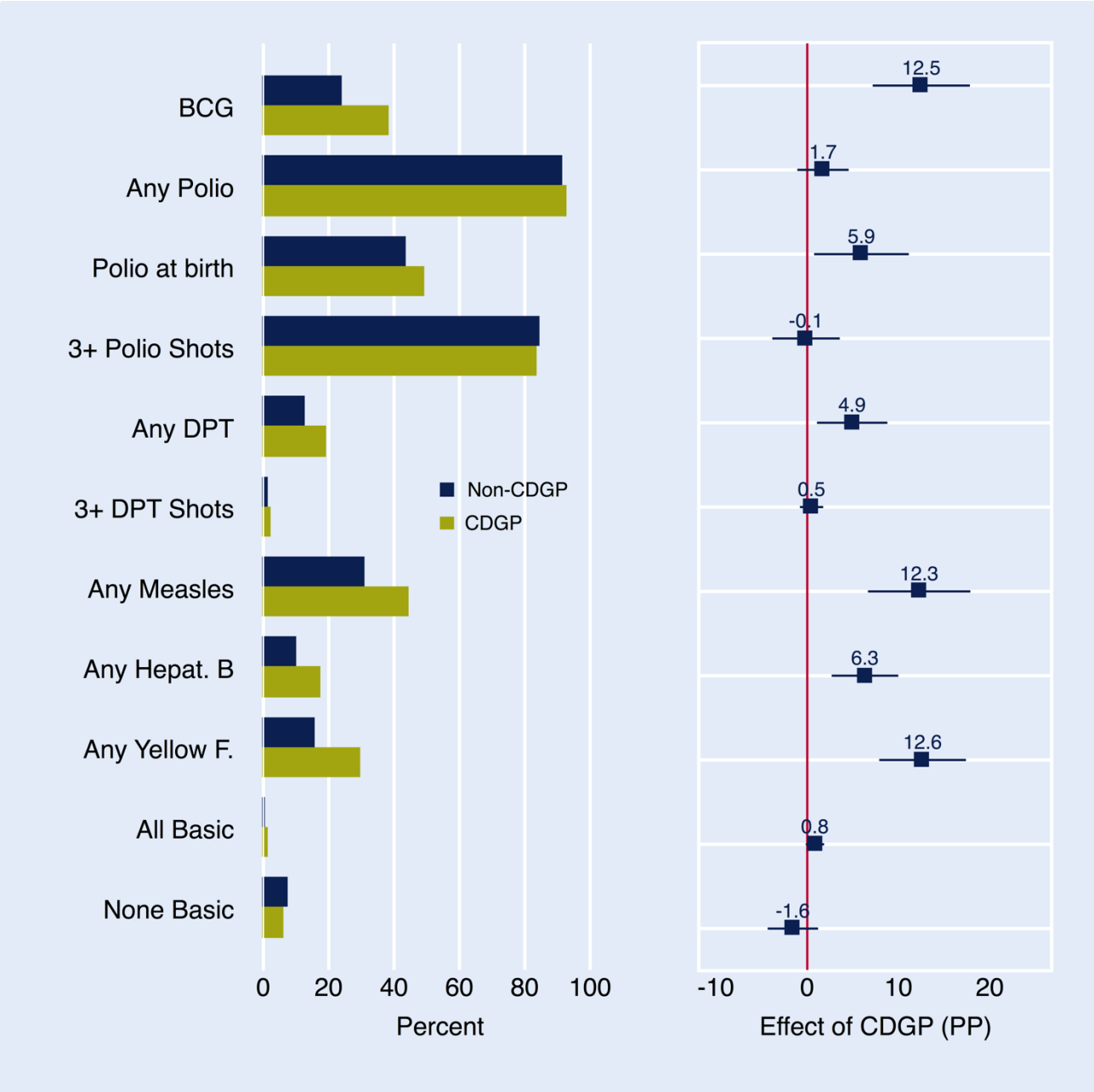
When we consider children who were born before the start of the CDGP (i.e. those aged between zero and five years at baseline), we no longer see any impacts of participation in the CDGP on stunting. As a consequence, we also see no negative impacts on wasting. This may provide support for the hypothesis that the first 1,000 days of life – from conception to age two – offer a critical and unique opportunity window of opportunity.

Finally, we document the impacts of the CDGP on **children's communication and motor skills**, as measured by parental reports on the Ages and Stages Questionnaire (ASQ). We focus only on the new children born *after* the start of the CDGP. We find no impacts on motor skills, but there are impacts at the bottom of the distribution of communication skills that lead to a reduction in the proportion of children in the Referral/Monitoring group (i.e. those with the lowest scores). In spite of this, even in CDGP communities, more than 60% of children have ASQ scores that, in rich country settings, would lead paediatricians to recommend these children for careful subsequent monitoring from a developmental nurse or psychologist.

9.1 Children's health

Figure 49, which focuses on child vaccinations, shows that participation in the CDGP led to investments in the health of children that went over and above nutrition. The extra resources available to households in CDGP communities may have allowed them to better access vaccination. It is also possible that some of the BCC activities also increased the demand for vaccination. Figure 49 shows that the programme led to statistically significant increases in the utilisation of the following vaccines: BCG, polio, measles, hepatitis B and yellow fever.

Figure 49: Effect of the CDGP on the vaccination of children born after the start of the CDGP (i.e. born after the baseline)



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Left panel shows unweighted estimates of mean levels in non-CDGP and CDGP areas.
3. Right panel shows the size of the effect of the CDGP, where the number and square are the point estimates and the dark blue line is the 95% confidence interval. Both are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level.
4. Means and effects are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
5. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.

Table 28 and Table 29 show that, as a result of participation in the CDGP, children are more likely to get deworming treatment, they are less likely to have injury and illnesses, they are less likely to have diarrhoea and they are more likely to receive adequate care when they do have diarrhoea. These factors are important for this evaluation as they are all factor known to be associated with malnutrition. While we perhaps expected impacts on diarrhoea-related outcomes, the other ones are more indirect and again indicate that participating in the CDGP has broad impacts in the lives

of children and their households, beyond the nutrition-related impacts that are the focus of the programme. We should also mention that, although the impacts on the incidence of diarrhoea are substantial, this remains a serious problem among children surveyed in our sample (with around one-third of children born *after* the start of the CDGP having diarrhoea in the last two weeks and one-fifth of children born *before* the start of the CDGP having diarrhoea in the last two weeks).

The improvements in the incidence of illness and diarrhoea are likely directly related to the better nutrition and breastfeeding practices observed in Section 6.2. This link was noticed by respondents in the qualitative midline investigation, who report noticing significant reductions in fever and diarrhoea episodes after their introduction of exclusive breastfeeding (Sharp & Cornelius, 2017, p. 40).

Table 28: Health and treatment for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of children given deworming medication in past six months	865	**15.9**	1853	**24.8**	**8.63*****	-0.14
					(1.97)	(2.74)
% of children who had an illness or injury in the past 30 days	865	**69.6**	1853	**61.0**	**-8.39*****	-0.74
					(2.30)	(2.63)
% of children who had diarrhoea in the past two weeks	865	**37.8**	1853	**30.6**	**-6.66*****	-3.61
					(2.18)	(2.52)
% of children for whom someone sought advice or treatment for the diarrhoea (among children who had diarrhoea in the past two weeks)	327	**78.3**	568	**84.2**	**5.96****	1.80
					(2.94)	(3.35)
% of children given ORS for diarrhoea (among children who had diarrhoea in past two weeks)	327	**40.7**	568	**48.6**	**8.91****	4.11
					(3.91)	(4.82)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Table 29: Health and treatment for children born before the start of the CDGP (aged 0–5 at baseline)

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% of children given deworming medication in the past six months	2620	12.9	687	**20.7**	1396	**31.4**	**10.48*** **	-2.87
							(2.49)	(3.30)
% of children who had an illness or injury in the past 30 days	2620	47.6	687	**64.3**	1396	**60.5**	-3.93	**-6.29***
							(2.67)	(3.36)
% of children who had diarrhoea in the past two weeks	2620	29.1	687	**20.1**	1396	**15.5**	**-4.33****	**-4.14****
							(1.92)	(2.07)
% of children for whom someone sought advice or treatment for the diarrhoea (among children who had diarrhoea in the past two weeks)	762	79.1	138	**80.4**	217	**88.0**	**7.05***	5.39
							(3.85)	(3.95)
% of children given ORS for diarrhoea (among children who had diarrhoea in past two weeks)	762	40.5	138	**45.6**	217	**53.9**	**9.53***	10.38
							(5.43)	(7.11)

Source: CDGP baseline and midline data. Notes:
1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

9.2 Children's nutritional status

In this section we start by reporting on the assessment of children's nutritional status, looking at the anthropometric indicators for children. These indicators are based on physical body measurements, such as height or weight. The technical compendium that accompanies this report describes the methods and specialist equipment used to obtain anthropometric measurements and to determine the age of young children. We report on four primary indicators: weight-for-height, height-for-age, weight-for-age, and MUAC.

Each of these indicators provides different information about growth and body composition, which can be used to assess nutritional status. Both weight-for-height and MUAC are good indicators of wasting, especially appropriate in emergency famine situations. In other words, they are good indicators of *acute* malnutrition. As we can see in the tables, these indicators of acute malnutrition are the ones for which the proportion of children showing severe signs of malnourishment are the smallest. In contrast, height-for-age is used to diagnose longer-term *chronic* malnutrition. The tables below indicate that chronic malnourishment affects a very large share of children in the sample.

In order to determine if a child is acutely or chronically malnourished, a child's anthropometric measurements are compared to the international growth standards published by the WHO in 2006. These growth standards were collected in the WHO Multicentre Growth Reference Study, which was designed to be used as the gold-standard approach to the assessment of child growth internationally (WHO, 2006). Each of the weight-for-height, height-for-age and weight-for-age indicators are expressed in standard deviation units (or a Z-score) from the median of the

Multicentre Growth Reference Study sample of children of the same age and sex. This gives the weight-for-height Z-score (WHZ), height-for-age Z-score (HAZ) and weight-for-age Z-score (WAZ). The estimated nutritional status of the survey population is expressed as the proportion of children with Z-scores below a certain cut-off point (WHO, 1995, p. 161). The anthropometric indicators are further described below.

Weight-for-height reflects body weight relative to height. Having a low weight-for-height is referred to as **wasting** and is attributed to **acute malnutrition**, which is a 'recent and severe process that has led to significant weight loss, usually as a consequence of acute starvation and/or disease' (WHO, 1995, p. 165). Children are classified as wasted when their WHZ is less than -2, and severely wasted when their WHZ is less than -3.

Height-for-age reflects the linear growth of children. Children below two years of age are measured lying down, whereas children above two years old are measured while standing, using a stadiometer. Having a low height-for-age is referred to as **stunting**. This index identifies past or **chronic malnutrition**, which is the effect of long-term poor health and inadequate diet, which leads to poor linear growth, in particular for children younger than two years old (WHO, 1995, p. 164). Children are classified as stunted when their HAZ is less than -2.

Weight-for-age reflects body mass relative to chronological age. It reflects both children's height-for-age and their weight-for-height, which makes interpretation complex. Children with a low weight-for-age are classified as **underweight** when their WAZ is less than -2. This index reflects both past (chronic) and/or present (acute) under-nutrition, although it is unable to distinguish between the two.

MUAC is a measure of the diameter of the upper arm and gauges both fat reserves and muscle mass. It is an alternative index of wasting, as against the measures outlined above. For children, a fixed (age-independent) cut-off point has sometimes been used to determine malnutrition, and it is also used a measure of mortality risk.

Table 30 and Figure 50 show the impacts of participation in the CDGP on child-level anthropometrics, focusing on children born *after* the start of the CDGP. These children were aged between 0 and 27 months at the time of the midline survey. They show that there are moderate impacts of the programme on height-for-age, and on the proportion of children stunted and severely stunted, which nevertheless remain at a very high level. We should point out, however, that children in CDGP areas are on average about a month younger than those in non-CDGP areas, and we need to take that into account since the severity of stunting is well known to increase dramatically with age and the beginning of life. We show in Volume II that, even after accounting for age differences, the CDGP has a positive impact on stunting, which is a bit smaller[30] but still statistically significant. In addition,

Figure 51 shows that the impact on height-for-age occurs throughout the distribution of this indicator. This means that the CDGP is having an impact on people with low and high HAZs.

Table 30 also shows that there is a decrease in weight-for-height. In other words, at any given age, individuals are taller in CDGP communities than in non-CDGP communities, but they are relatively thinner. This is not driven by a decrease in weight-for-age but rather by an increase in height-for-age as a result of the programme. It is possible that early improvements in nutrition contribute to an increase in a child's height, but a chronic lack of access to adequate nutrition in this area, even in CDGP areas, prevents children's weight gains from keeping up with their height gains. It is striking how there is no impact of the CDGP anywhere in the distribution of weight-for-age, in spite of

[30] When you control for age, the CDGP reduces the proportion stunted by 4pp instead of 6pp.

statistically significant but moderate impacts on height-for-age, and consequently moderate reductions in stunting rates.

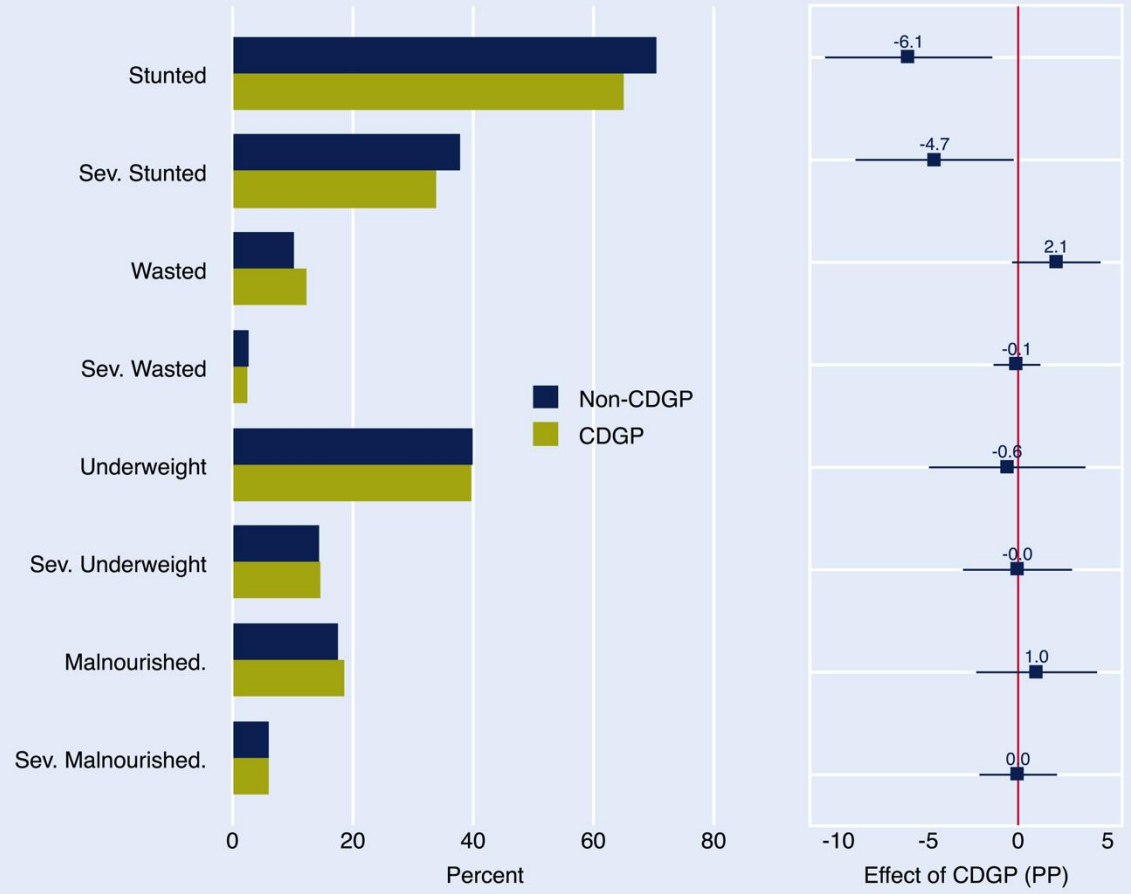
In Volume II we show the results disaggregated by gender. We see similar results for boys and girls, so it does not appear that the effect of the CDGP on anthropometric outcomes varied by gender.

Table 30: Anthropometrics for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
Age in months	865	**19.5**	1853	**18.6**	**-0.90****	-0.37
		(6.6)		(6.4)	(0.29)	(0.32)
Weight (kg)	859	**8.78**	1835	**8.69**	-0.11	**-0.26****
		(1.77)		(2.90)	(0.09)	(0.13)
Height (cm)	860	**74.2**	1828	**74.0**	-0.24	**-0.61***
		(6.8)		(7.0)	(0.29)	(0.36)
BMI-for-age Z-score	851	**-0.13**	1819	**-0.28**	**-0.15*****	-0.08
		(1.14)		(1.16)	(0.05)	(0.07)
Height-for-age (HAZ)	851	**-2.57**	1819	**-2.39**	**0.21*****	-0.07
		(1.34)		(1.36)	(0.07)	(0.08)
% who are classed as stunted (HAZ<-2)	851	**70.5**	1819	**65.0**	**-6.10*****	1.17
					(2.36)	(2.58)
% who are classed as severely stunted (HAZ<-3)	851	**38.0**	1819	**34.0**	**-4.65****	**4.86***
					(2.24)	(2.66)
Weight-for-height (WHZ)	851	**-0.54**	1819	**-0.66**	**-0.11****	-0.09
		(1.13)		(1.15)	(0.05)	(0.07)
% who are classed as wasted (WHZ<-2)	851	**10.2**	1819	**12.3**	**2.13***	2.73
					(1.25)	(1.89)
% who are classed as severely wasted (WHZ<-3)	851	**2.7**	1819	**2.5**	-0.06	0.70
					(0.66)	(0.71)
Weight-for-age (WAZ)	851	**-1.73**	1819	**-1.71**	0.04	-0.10
		(1.20)		(1.19)	(0.06)	(0.08)
% who are classed as underweight (WAZ<-2)	851	**40.0**	1819	**39.9**	-0.61	3.27
					(2.21)	(2.63)
% who are classed as severely underweight (WAZ<-3)	851	**14.6**	1819	**14.7**	-0.03	1.08
					(1.54)	(1.96)
MUAC	860	**135.1**	1834	**134.6**	-0.46	**-1.55***
		(13.0)		(13.5)	(0.65)	(0.83)
% who are classed as malnourished (MUAC<125)	860	**17.6**	1834	**18.7**	1.03	1.13
					(1.71)	(2.08)
% who are classed as severely malnourished (MUAC<115)	860	**6.2**	1834	**6.1**	0.01	1.20
					(1.10)	(1.18)
Source: CDGP baseline and midline data. Notes:						

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006).

Figure 50: Effect of the CDGP on stunting, wasting and underweight for children born <u>after</u> the start of the CDGP (i.e. born after the baseline)



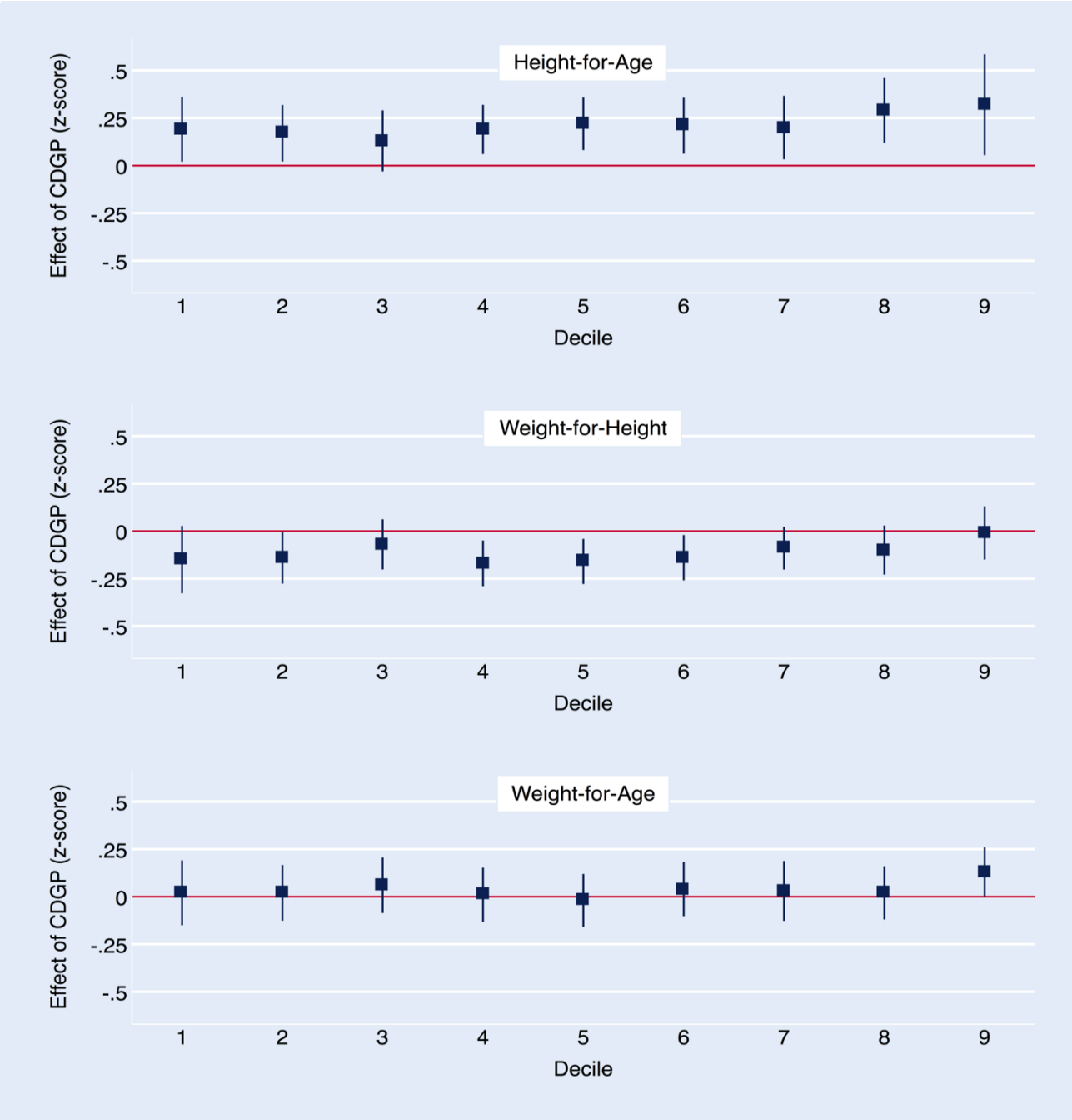
Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006).

Figure 51 shows that the impacts on height-for-age occur across the whole distribution of this indicator as mentioned above and, if anything, are larger at the top of the distribution. There are no impacts on weight-for-age at any point in the distribution, and the negative impacts on weight-for-

height occur again towards the whole distribution, perhaps more prominently in the middle and bottom.

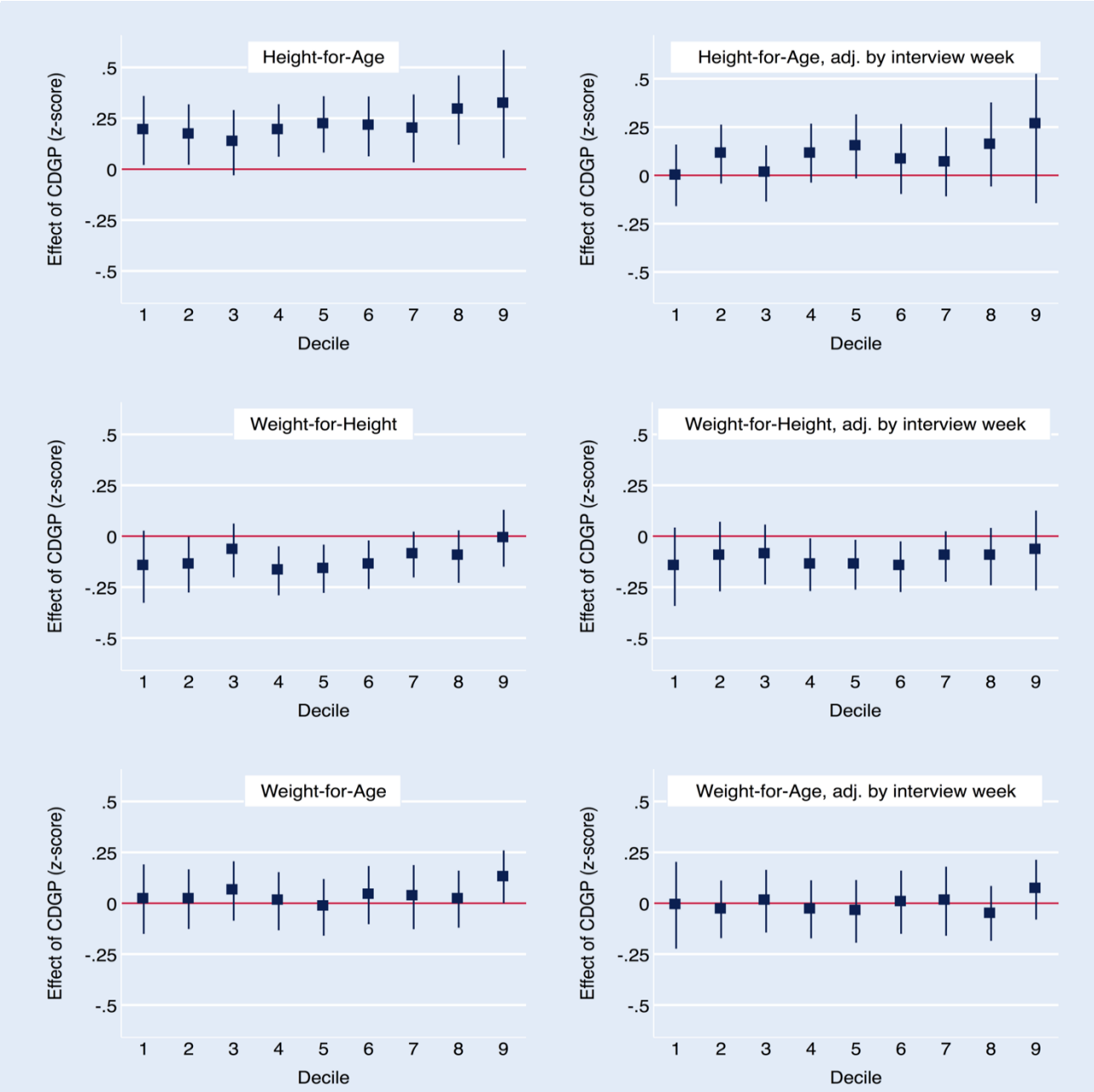
Figure 51: Effect of the CDGP on the nutritional status of children born after the start of the CDGP (i.e. born after the baseline)



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The chart depicts the effect of the CDGP on different deciles of the distribution of nutritional status Z-scores (HAZ, WHZ and WAZ). For example, if the effect on the 5th decile (i.e. the median) of the Z-score is .1, it means that the median of the distribution has been shifted upwards by 10% of a standard deviation due to the CDGP.
3. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval. Estimates for the first decile are not reported, because of zero values for earnings in the lower tail of the distribution.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.
5. All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006).

Figure 52: Effect of the CDGP on nutritional status for children born after the start of the CDGP (i.e. born after the baseline) – week of interview adjustment



Source: CDGP midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. The chart depicts the effect of the CDGP on different deciles of the distribution of nutritional status Z-scores (HAZ, WHZ and WAZ). For example, if the effect on the 5th decile (i.e. the median) of the Z-score is .1, it means that the median of the distribution has been shifted upwards by 10% of a standard deviation due to the CDGP.
3. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval. Estimates for the first decile are not reported, because of zero values for earnings in the lower tail of the distribution.
4. The effect of the CDGP is statistically significant at the 5% level *if the confidence interval does not overlap with the vertical red line*. The red line indicates zero effect.
5. All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006).

In Table 31 we conduct the same exercise but focusing on children who were born before the start of the CDGP and were aged between zero and five years at the time of the baseline. For this group of children the proportions of children who are stunted, wasted and underweight are lower than for the group of children who were born after the start of the CDGP, although they are still alarmingly

high. This is consistent with the literature that shows that stunting, wasting and underweight prevalence rates tend to peak around the age of 24 months. This group of children who were born before the start of the CDGP who were in CDGP communities were still exposed to two years of the programme, but not from birth. It is interesting that we no longer see any impacts of participation in the CDGP on stunting. As a consequence, we also see no negative impacts on wasting. This may provide support for the hypothesis that the first 1,000 days of life – from conception to age two – offer a critical and unique window of opportunity. However, in Section 4 we showed that most women start participating late in pregnancy or around the time of birth, so the first nine months (270 days) of this window are being missed.

Table 31: Effect of the CDGP on nutritional status for children born before baseline

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
BMI-for-age Z-score	2539	0.15	316	**-0.01**	611	**-0.01**	-0.00	0.03
		(1.16)		(0.93)		(0.91)	(0.07)	(0.08)
Height-for-age (HAZ)	2539	-2.57	316	**-2.16**	611	**-2.22**	-0.03	-0.08
		(1.44)		(1.08)		(1.09)	(0.08)	(0.10)
% who are classed as stunted (HAZ<-2)	2539	67.9	316	**57.9**	611	**58.4**	-0.49	0.07
							(3.77)	(4.32)
% who are classed as severely stunted (HAZ<-3)	2539	37.4	316	**22.1**	611	**23.2**	0.04	4.92
							(2.99)	(3.77)
Weight-for-height (WHZ)	2539	-0.19	316	**-0.17**	611	**-0.19**	-0.02	0.02
		(1.15)		(0.93)		(0.92)	(0.07)	(0.08)
% who are classed as wasted (WHZ<-2)	2539	6.1	316	**2.2**	611	**2.1**	0.13	1.81
							(1.03)	(1.12)
% who are classed as severely wasted (WHZ<-3)	2539	1.6	316	**0.6**	611	**0.2**	-0.43	-0.34
							(0.47)	(0.33)
Weight-for-age (WAZ)	2539	-1.60	316	**-1.43**	611	**-1.47**	-0.03	-0.04
		(1.15)		(0.84)		(0.85)	(0.06)	(0.08)
% who are classed as underweight (WAZ<-2)	2539	33.7	316	**25.6**	611	**27.0**	0.81	4.65
							(3.28)	(4.07)
% who are classed as severely underweight (WAZ<-3)	2539	12.3	316	**2.9**	611	**3.8**	0.56	1.41
							(1.11)	(1.47)
MUAC	2589	147.7	658	**152.4**	1349	**152.1**	-0.22	-0.58
		(15.2)		(10.6)		(10.9)	(0.57)	(0.72)
% who are classed as malnourished (MUAC<125)	2589	5.8	658	**0.3**	1349	**0.3**	-0.04	0.06
							(0.26)	(0.29)
% who are classed as severely malnourished (MUAC<115)	2589	2.0	658	**0.0**	1349	**0.1**	0.06	0.19
							(0.06)	(0.18)

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
7. All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006). The sample size at midline is reduced due to the fact that these Z-scores are not defined by WHO standards above 59 months, and many of the children surveyed at the time of the baseline are older than 59 months by the time of the midline.

9.3 Comparing the nutritional status impact of CDGP to other RCTs

In this section, we briefly examine the estimated impacts of CDGP on child nutritional status in the context of the existing literature. In Figure 53, we compare the effect of CDGP to other comparable interventions in developing countries. We focus on randomised evaluations of cash transfers (conditional and unconditional) and informational interventions, both with and without provision of cash.

The evidence on the effect of cash transfers on anthropometric z-scores of young children is somewhat mixed (Bastagli, et al., 2016), pointing to more beneficial effects from conditional programmes and on height/stunting. It is important to highlight that in many cases the conditionalities imposed as part of CCTs implicitly contain an informational component (e.g. they stress important behaviours such as health check-ups), which might be absent in unconditional transfers.

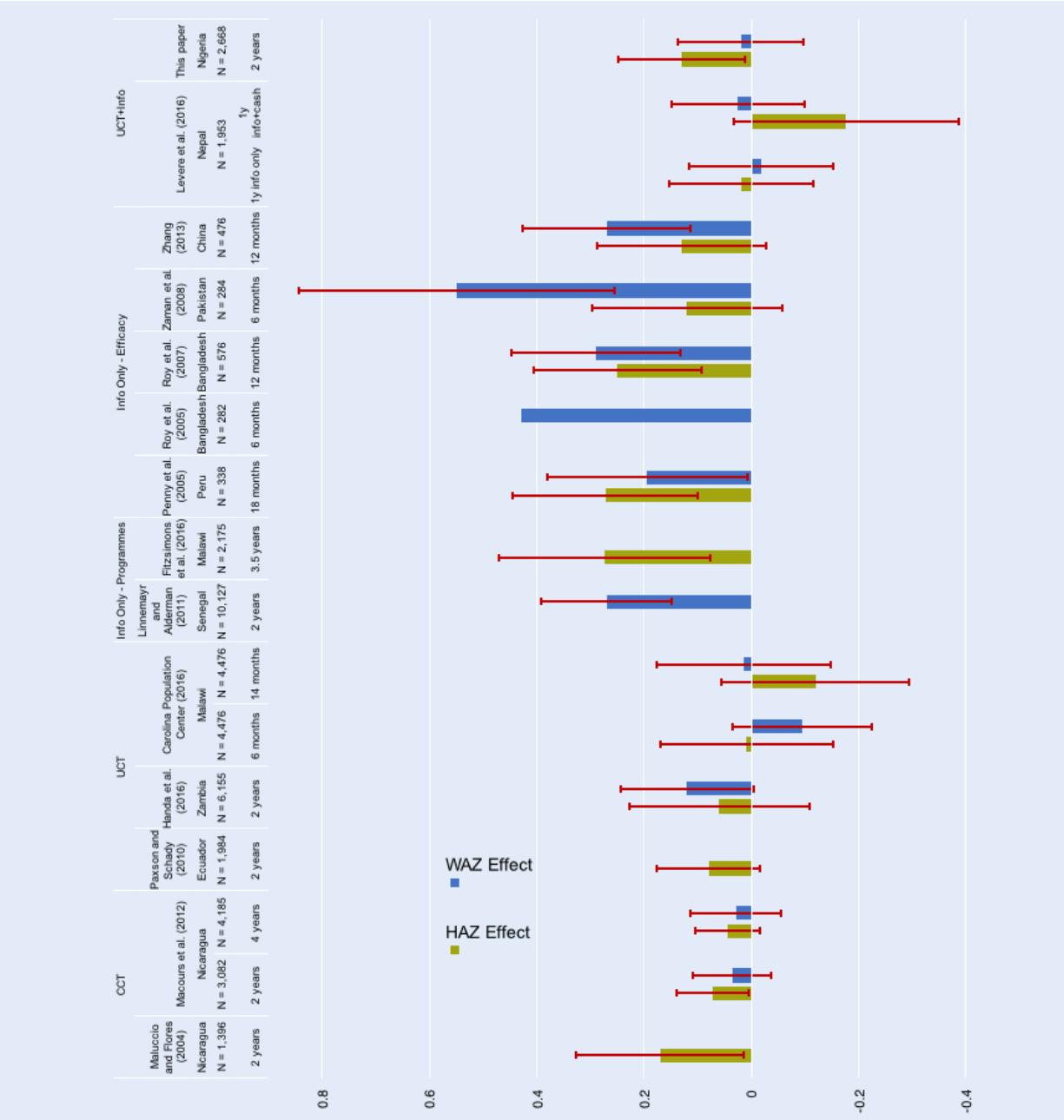
Interventions that provide information or education around early childhood practices – broadly similar to the informational component in CDGP – have proven to be more effective, especially if carried out with small-scale, intensive modalities with closer monitoring of compliance to encouraged behaviours. Notably, many of these interventions start in the pregnancy period or very early in the child's life (Dewey & Adu-Afarwuah, 2008), which is not always true for cash transfers.

The only other intervention that combines information and unconditional cash transfers is examined in Levere et al. (2016). However, their follow-up length is approximately half the duration of ours, and the grant is disbursed for just 7 months, which might explain their null finding.[31]

In this context, the size of the effect of CDGP is consistent with the importance of behaviour change activities on top of material resources: the effect on stunting we find is slightly above the CCT in Maluccio and Flores (2005), and below the ones estimated for efficacy trials of behaviour change.

[31] They do however estimate positive effects of the intervention on older siblings of the target child.

Figure 53: Summary of impacts of cash and information on child nutritional status



(Maluccio & Flores, 2005)Notes:

1. The figure presents impacts of different interventions on child nutritional status, measured by height-for-age (HAZ) and weight-for-age (WAZ) z-scores computed using 2006 WHO growth charts (WHO, 2006). The point estimate of the effect is represented by the height of the bar; 95% confidence intervals of the effect are in the red lines. An effect is significantly different from zero if the confidence interval does not overlap with the horizontal line at zero.
2. The studies considered are restricted to randomised evaluations in developing countries published after 2000 that examine impacts on at least one of HAZ and WAZ of children aged 0 to 5 years old. They do not stem from a systematic review of all published evidence. Example of systematic reviews can be found elsewhere (Bastagli, et al., 2016; Dewey & Adu-Afarwuah, 2008; Fiszbein & Schady, 2009; Bhutta, et al., 2008).
3. Various types of interventions are considered: *CCT* = Conditional cash transfer; *UCT* = Unconditional cash transfer; *Info only* = education / information / behaviour change interventions targeted at early childhood practices without provision of cash or food/food supplements (excluding early childhood stimulation); *Info only – Programmes* = large scale programme setting, with limited control on adherence to treatment; *Info only – Efficacy* = smaller scale interventions with controlled adherence and close follow-up; *UCT + info* = provision of both unconditional cash transfer and education / information.
4. For each study, we report authors (year), country of implementation, sample size for nutritional status, and duration of the intervention. Studies within the same type and across types vary widely in terms of context (e.g. initial level of malnutrition), and intervention characteristics (e.g. intensity of cash injection, conditionalities, content of informational component).

9.4 Children's communication and motor skills

The CDGP baseline interviews included the administration of the ASQ-3™ version of the Ages & Stages Questionnaires® (ASQ) (Squires, 2009). The ASQ, as implemented in the CDGP, surveys two areas of infant and child behaviour: communication skills (i.e. babbling, vocalising, listening, and understanding) and gross motor skills (i.e. arm, body and leg movements). For each of these areas the questionnaire presents six items describing a particular action or behaviour that is expected from a child that is developing correctly: each item can be answered 'Yes' (scores 10 points), 'Sometimes' (scores five points), or 'Not yet' (scores 0 points). The scores for each area are then added together, generating two scales ranging from 0 to 60. The questionnaire is built to be administered to children of varying ages: in the version used in the CDGP baseline, there are 14 different modules, with items appropriate for the different child age bands, from five months to 37 months.[32]

Validation of the ASQ method applied to a sample of more than 18,000 questionnaires has led to the calculation of area-specific cut-off scores, which make it possible to identify children who might show signs of developmental delays or disorders. Subjects with scores that fall more than two standard deviations below the mean of this reference population are included in the 'Referral' group, for which further diagnostic assessment is recommended. Children between -1 and -2 standard deviation are included in a 'Monitoring' group, and might require closer attention, specialised activities and/or repeated screening. Children above -1 standard deviation are considered to be developing appropriately.

These referral and monitoring cut-offs were calculated on the basis of a sample of US children. Therefore, all statistics in this section are relative to this population. One important aspect to emphasise before presenting any numbers is that several items of the ASQ had to be adapted to the setting we were considering.

In documenting the impacts of the CDGP on children's communication and motor skills, we focus only on the new children born *after* the start of the CDGP. We find no impacts in motor skills, but there are impacts at the bottom of the distribution of communication skills that lead to a reduction in the proportion of children in the Referral/Monitoring group (those with the lowest scores). In spite of this, even in the CDGP communities, more than 60% of the children have ASQ scores that, in rich country settings, would lead paediatricians to recommend these children for careful subsequent monitoring from a developmental nurse or psychologist.

[32] The age bands in the CDGP version of the ASQ are as follows:

- 5–6 months (152–212 days)
- 7–8 months (213–272 days)
- 9–10 months (273–333 days)
- 11–12 months (334–394 days)
- 13–14 months (395–455 days)
- 15–16 months (456–516 days)
- 17–18 months (517–577 days)
- 19–20 months (578–638 days)
- 21–22 months (639–699 days)
- 23–25 months 15 days (700–775 days)
- 25 months 16 days - 28 months 15 days (776–867 days)
- 28 months 16 days – 31 months 15 days (868–958 days)
- 31 months 16 days – 34 months 15 days (959–1049 days)
- 34 months 16 days – 37 months (1050–1155 days)

Table 32: ASQ for children born after the start of the CDGP (i.e. born after the baseline)

	Midline				Effect of CDGP	High–low diff.
	Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
ASQ Communication Skills Score	807	**25.1**	1721	**26.5**	1.28	-1.46
		(16.6)		(17.2)	(0.96)	(1.05)
ASQ Communication Skills Referral/Monitoring Class	807	**68.0**	1721	**63.0**	**-4.91****	3.06
					(2.38)	(2.82)
ASQ Gross Motor Skills Score	807	**35.8**	1721	**37.5**	1.60	-1.77
		(17.9)		(18.4)	(1.02)	(1.19)
ASQ Gross Motor Skills Referral/Monitoring Class	807	**60.0**	1721	**55.8**	-4.19	**5.67***
					(2.75)	(3.25**)**

Source: CDGP baseline and midline data. Notes:

1. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
2. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
3. Effect of CDGP = the difference in means between CDGP and non-CDGP communities at midline.
4. High–low diff. = difference in means between communities receiving high-intensity BCC and those receiving low-intensity BCC.
5. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.
6. Both the 'Effect of CDGP' and the 'High–Low diff.' are estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).

Part C: Conclusion

10 Conclusion

In this section we present the conclusions to our midline evaluation. We start by reporting on our findings on the key evaluation hypotheses. We then present the lessons learned from this evaluation and finally we discuss the recommendations that follow from the findings.

10.1 Testing the key evaluation hypotheses

There were three key evaluation hypotheses that this midline sought to test. These are shown below along with our findings.

Evaluation Hypothesis I: *The CDGP intervention, and in particular the provision of a regular transfer of NGN 3,500 on a monthly basis to women, will result in the consumption of larger quantities, and more varied types, of food, resulting in an increase in dietary intake and consequently a reduction in child malnutrition.*

Midline finding: The CDGP did result in an increase in the quantity and quality of food. It led to an increase in the height of children born during the CDGP intervention period, but not in proportional increases in weight. The CDGP led to improvements in the stunting rates of young children, born during the implementation of the CDGP, but not in the stunting rates of older children, born before the beginning of the programme. The learning from this is discussed below.

Evaluation Hypothesis II: *The provision of a regular predictable cash transfer will result in a reduction in negative risk-coping behaviour and, in particular, a reduction in the distress sale of assets and debt accumulation among beneficiary households.*

Midline finding: The CDGP reduced the use of coping mechanisms cited by respondents. The programme has reduced households' need for external assistance, e.g. from family and friends or by borrowing money. It also significantly decreased the instances where family members had to take on more work or move away from the community to find work. Selling assets was not found to be one of the main coping mechanism, and the CDGP did not have a significant impact on the proportion of people who sold assets to cope with food shortages.

Evaluation Hypothesis III: *Through nutritional advice and counselling the programme will improve the KAP of the targeted men and women in relation to nutrition and general maternal and childcare practices.*

Midline finding: We find that the CDGP had a large impact on a wide range of indicators measuring men and women's knowledge about and attitudes toward healthy breastfeeding and IYCF practices. We also found significant effects on reported practices, including exclusive breastfeeding and use of antenatal services, among others.

10.2 Lessons about the CDGP

1. **In terms of targeting, the CDGP is reaching extremely vulnerable populations with a high incidence of serious health and nutrition problems.** The CDGP operates in areas where populations are very vulnerable to multiple natural and man-made shocks. Food insecurity and poor access to clean water and sanitation are serious problems and, as a consequence, the population has poor nutrition and health, while there are important developmental delays already in very young children. The CDGP therefore has the

potential to be a very important source of support to families in these areas, providing resources and health and nutrition information. When it comes to children, it is well known that these early problems prevent children from reaching their full potential and have dramatic long-term consequences in their lives – and, as a consequence, in the lives of their communities (Lancet Series, 2016). Given what we know, the focus of the CDGP on the earliest stages of life is exactly the right one.

2. **The timing of the first payment varies widely across women, and many women receive their first payment only around the time of delivery.** Although the programme is designed to start the payment of transfers as soon as the woman is pregnant, the reality is that, for many of the mothers who were already pregnant at baseline, the first payment does not come until around the time of delivery. This is probably due to the delays in implementation processes that were highlighted by both the process evaluation and the qualitative midline evaluation in the early phase of CDGP. The timing of enrolment has improved since then, and the first payment is disbursed approximately two months earlier than at the beginning of the programme. It is likely to be important to begin payments as early as possible. As we see below, the CDGP appears to benefit stunting only for younger children, exposed to the programme *in utero* and right after birth, and not for older children. Therefore, payments should be delayed as little as possible after conception.
3. **Women generally retain control of the cash transfer and it is mostly being spent on food.** In the majority of households, women report having control over how the cash transfer is spent. Almost all the CDGP transfer is spent on food (for the household in general, or for children in particular) and the remainder is usually spent on child-related expenditures (such as on health and clothing).
4. **It is important to provide BCC through multiple sources, since husbands and wives access messages from different sources.** While wives seem to mainly recall the messages from posters, group meetings and health talks, husbands recall messages provided mostly via radio announcements.
5. **There are no significant differences in implementation between high- and low-intensity BCC communities.** The two modes of the CDGP should have differed in the intensity of delivery of BCC. However, in practice BCC appears to have been implemented fairly similarly across all programme communities regardless of their assigned intensity. As a result, there are not many differences in programme impacts across communities assigned to different levels of BCC intensity.[33] It is important to understand why this occurred. As a consequence of this, the evaluation has not been able to measure the difference in impacts between the between high- and low-intensity BCC models of implementation.

10.3 Lessons about the impact of CDGP

1. **The CDGP has positive impacts on the health, nutrition and development of young children in these communities.** This report shows that the programme impacts the health, nutrition and development of young children and their mothers in the participating communities. Some potential mechanisms through which this occurs, and which are documented in this report, are the following:
    - Increases in mothers' and fathers' knowledge of adequate health and nutrition practices;

[33] The effect of the CDGP is often higher in the high-intensity communities than in the low-intensity communities, but the difference in the effect of the CDGP between high-intensity communities and low-intensity communities is usually not statistically significant.

- Increases in the use of ANC, deworming and vaccination;
- Increases in exclusive breastfeeding and other improvements in IYCF practices; and
- Increases in food expenditure/consumption, and increases in dietary diversity.

This shows that a combination of cash transfers and information can generate important changes in the lives of children at very young ages.

2. **The CDGP leads to increases in the height of poor children, but not in proportional increases in weight.** It is plausible that children are receiving more nutritious foods that enable growth, or that the benefits of better breastfeeding practices enable growth, or even that they are born less stunted to start with from better nourished mothers, but then do not receive enough calories to enable them to gain sufficient weight for their height.
3. **The CDGP leads to improvements in the stunting rates of young children, born during the implementation of the CDGP, but not in the stunting rates of older children, born before the beginning of the programme.** It is possible that the impacts of cash transfers and BCC on stunting only occur if the child is exposed *in utero* and slightly after. The lack of impact in older children is despite the general increase in food resources in the home, which were available to poor and young children, and improvements in the health of older children. Relative to older children, younger children have received better ANC while *in utero*, have had a more nourished mother while *in utero*, benefited from improved breastfeeding (in particular from exclusive breastfeeding for the first six months), and benefited from higher food resources from an earlier age (namely in the availability of dairy products at home, where programme impacts are particularly large).
4. **Despite the impacts of the CDGP, the population in participating villages remains malnourished and subject to substantial food insecurity.** We find the programme had statistically significant impacts across several dimensions. However, these impacts are not very large, and need to be weighed against the cost of this and alternative interventions. For example, food expenditure increases by more than 15% of a standard deviation in CDGP compared to non-CDGP areas, the proportion of young children with episodes of diarrhoea in the two weeks prior to the survey declines from 36% to 30%, and the proportion of severely stunted young children declines from 38% to 34%. However, the incidence of diarrhoea, malnutrition, food insecurity and several other problems documented in this report remain at alarmingly high levels in these communities even after the positive effect of the CDGP. It is impossible to say if an increase in transfer amounts or transfer duration, the intensity of BCC, or changes to some other programme parameters would lead to even larger programme impacts.
5. **The CDGP has led to more children being born to women living in areas that receive it. This may indicate an unintended fertility effect of the programme, but at this stage we are not able to conclusively determine the reason for this effect.** We find that the percentage of women who gave birth to any child between baseline and midline is higher in CDGP communities compared to non-CDGP communities. This in turn means that the number of biological children born after baseline is slightly larger in CDGP communities compared to non-CDGP communities. There could be a number of explanations for this result, and at present we are not able to disentangle the possible causes. One possibility is that the programme has had an effect on fertility, by providing an incentive for women to become pregnant in order to receive transfers. This would represent an unintended effect of the programme. However this effect could also be caused by some families bringing forward pregnancies that they had planned to have anyway, in order to benefit from the intervention whilst it was operating. This would mean that CDGP wouldn't lead to an overall increase in the expected number of children per woman over her lifetime, but rather, just altering the timing of pregnancies that would have happened anyway. A final hypothesis is

that the programme may have contributed to women having healthier pregnancies through its effect on dietary practices and health seeking behaviour, leading to a higher proportion of pregnancies resulting in healthy births in CDGP areas. We recommend further investigation of this phenomenon to understand its causes. If there is an unintended fertility effect associated with this programme, we recommend that CDGP consider ways to implement its interventions in such a way as to minimise incentives that could lead to an overall increase in the number of children per woman.

Based on these lessons it is clear that the CDGP can be a viable social protection instrument that has important effects on the health and nutritional wellbeing of children in the first 1,000 days of their lives. The programme would nevertheless require further review and adjustments to better lend itself to a scalable national programme. Review of the community voluntary approach, intensity of BCC, the payment levels and modalities and its link to broader institutional setting would be the first steps in this direction. While a social assistance programme that combines cash with BCC can, as demonstrated here, reduce malnutrition and improve child outcomes, its limitation in significantly improving child nutritional outcomes needs to be recognised. Placing a 'cash plus' programme within a broader set of complementary interventions focused on supply side issues is necessary. Moreover comparisons of the cost effectiveness of various nutrition focused interventions will shed further light on the appropriateness of each.

10.4 Recommendations for CDGP implementation

1. **Review enrolment procedure so payments can begin earlier in pregnancy.** We find that the CDGP appears to reduce stunting only for children born after the CDGP programme started, but not for children born beforehand. This finding is supportive of the hypothesis that intervening early in life, and in particular within the first 1000 days, may be key to realising impacts on child nutritional status. We therefore recommend that payments should be delayed as little as possible after conception. We do not have concrete evidence for why impacts emerge only for children exposed to the programme *in utero* and right after birth, but not older children. It could be a result of improved feeding practices from birth and/or improved maternal health and maternal practices during pregnancy. We do note that the programme implementers have sought to address delays in enrolment since the time of our baseline. We see evidence that the timing of enrolment has now shifted earlier in pregnancy than the average given in this report, to about the 5th month of gestation. There may still be scope to improve this further.
2. **Continue providing BCC through multiple channels because males and females access messages from different sources.** As discussed above, females report recalling messages mainly from posters, group meetings and health talks, while males recall messages provided mostly via radio announcements.
3. **Review continuous enrolment procedures as not all women in CDGP communities who become pregnant are being enrolled in the programme.** In total, 83% of women who gave birth between baseline and midline and live in CDGP communities, and thus were eligible for the CDGP, ended up receiving payments. There is therefore scope to improve the enrolment procedures to ensure all eligible women receive the programme.
4. **There may be a need to review the design of the CDGP to ensure that there is no long-term effect on total number of pregnancies per women.** The results provide some evidence that there may be a fertility effect of CDGP, although the mechanism behind this result is not yet clear. If this is the case, then we recommend that implementers consider ways to alter to design of the programme to mitigate the possibility that it leads to an overall

increase in the number of children per woman. For example, a similar cash transfer programme in Bihar, India offers a bonus if enrolled women are not pregnant again after 24 months, which is equivalent to eight months of the transfer value.

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Annex A How to read the tables and figures

Throughout this report, we often present the midline data and the effects of the CDGP in tables and figures.

The tables follow a standard format. Section A.1 describes how these tables are laid out and should be read.

We adopt a number of different figure types to visualise the main results in the report. These can be categorised as follows:

1. Figures that visualise the **effect** of the CDGP;
2. Figures that visualise the **effect size** of the CDGP (sometimes used in Volume II);
3. Figures that visualise effects across the distribution of a continuous indicator (**quantile effects**); and
4. Figures that visualise categorical data[34] and figures that visualise continuous data.[35] These are described in more detail below.

A.1 Tables

A simple example of a table for midline results in this document is given below (Table 33). For each indicator, we report results for three groups of observations:

- **Baseline**: statistics for the entire sample at baseline;[36]
- **Midline non-CDGP**: statistics at midline for the subsample of households residing in areas where CDGP is not operating; and
- **Midline CDGP**: statistics at midline for the subsample of households residing in areas where CDGP is in operation.

For each of these columns, we report two sub-columns:

- The number of responses available (sub-column 'N'). This indicates the **number** of observations in the sample on which that indicator is based. This gives an indication of how certain we can be about the estimate in question. The more respondents that answer a question, the more certain we can be that the estimate reflects the true situation.
- The mean and standard deviation ('Mean (SD)' sub-column). The **mean** is the average of the answers that were given by the respondents for each question. The mean is reported as a percentage for dichotomous indicators (e.g. owning a bicycle) and in the relevant unit of measurement for continuous indicators (e.g. height of child). The **standard deviation** is a measure that is used to quantify the amount of variation or dispersion in the answers that were given by the respondents. A standard deviation close to 0 indicates that the answers were very

[34] Categorical data are data where the outcome can take one of a limited number of possible values, thus assigning each individual or household to a particular group or category (e.g. type of toilet).
[35] Continuous data are data where the outcome can be measured on a continuum or scale (e.g. height of child).
[36] Some indicators are available only at midline either because they were not recorded at baseline (e.g. height of the children born after the start of CDGP, i.e. born after baseline) or their definition has changed significantly at midline (e.g. different seasons were used in recording food security). In such cases, we leave the 'Baseline' column in the table blank. When the entire table contains midline-only indicators, we drop the 'Baseline' column altogether.

close to the mean, while a high standard deviation indicates that the answers were spread out over a wider range of values. Standard deviations are reported only for continuous indicators.

Finally, the last two columns report:

- The **Effect of CDGP**. This is the estimated effect of the CDGP intervention on the indicator in question, as obtained by the methodology outlined in Section 2.2.
  - The mean effect is presented on top, giving the size of the effect of the CDGP in the same unit of measurement as means in previous columns – e.g. percentage points for dichotomous indicators.
  - The standard error of the mean is presented below. Intuitively, the standard error captures the level of uncertainty around the estimated effect: if the SE is small compared to the mean, it suggests that the effect is precisely estimated.
  - When the effect is estimated to be statistically significant (i.e. statistically different from zero), we mark it with a series of asterisks:

    * = significant at the 90% level
    ** = significant at the 95% level
    *** = significant at the 99% level

    This means that the more asterisks that are shown, the more likely that the observed difference between non-CDGP and CDGP households is due to a real effect of the programme, rather than being due to chance. However, it is important to note that, by design, 5% of the time the difference will be shown as significant when actually there is no real difference between the two groups. It is important to note that, where results are not asterisked, this does not mean that there is no effect of the CDGP but rather that any difference cannot be asserted with such a high degree of confidence (90% or more).
- The difference between the mean of the indicator in question between the high-intensity BCC group and the low-intensity BCC group (column 'High–low diff.'). This difference is presented in the same way as the effect of the CDGP, with the mean at the top and the SE at the bottom, and asterisks representing significance. This column is useful to detect whether any difference in indicators was present between the two different types of BCC intervention in the CDGP.

In tables, footnotes are indicated by the symbols '⁺', '‡' or '†', and the notes themselves are given at the bottom of the table.

Table 33: Example table

	Baseline		Midline				Effect of CDGP	High–low diff.
			Non-CDGP		CDGP			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
HEADING								
Dichotomous indicator	3688	4.1	1007	**5.0**	2106	**5.0**	0.29	-0.1
							(1.21)	(0.1)
Continuous indicator‡	3686	458.2	1007	**154.6**	2106	**414.4**	**276.88****	126.28
		(3888.8)		(2047.6)		(3854.3)	(123.43)	(182.21)
Categorical indicator with multiple options/responses								
Option/response 1	3688	95.6	1022	**96.5**	2117	**95.3**	-1.20	0.7
							(1.04)	(0.6)
Option/response 2	3668	4.4	1008	**3.5**	2081	**4.7**	1.20	-0.7
							(1.04)	(0.6)
Notes: ‡*Notes for continuous indicator*								

We adopt a slightly different table format when we investigate the features of the programme, an example of which is in Table 34, focusing on a single categorical indicator. In this case, we are not interested in the effect of the CDGP but in the different ways in which the programme was implemented in the three groups of communities, i.e. no CDGP, low-intensity BCC and high-intensity BCC. Consequently, there is no column for the baseline estimates. Instead, we can find:

- Two columns for each of the three groups at midline. One contains the number of observations ('N') and the other the mean (and SD, if continuous) of the indicator ('Mean (SD)'), with the same definitions as for the previous table.
- As in the previous table, the difference between the mean of the indicator in question between the high-intensity BCC group and the low-intensity BCC group (column 'High–low diff.'). This again includes asterisks for significance, but no standard error.

Table 34: Example table 2

	Midline						
	No CDGP		Low intensity		High intensity		High– low diff.
	N	Mean	N	Mean (SD)	N	Mean (SD)	Mean
Categorical indicator							
Option/response 1	1009	24.40%	1026	95.30%	1083	99.40%	0.041*
Option/response 2	1009	74.70%	1026	4.70%	1083	0.50%	-0.042*
Option/response 3	1009	0.90%	1026	0.00%	1083	0.10%	0.001

A.2 Figures for effects

The main interest in the report is to analyse the effects of the CDGP on various indicators. The main tool we use to visualise these effects is a combination of a horizontal bar chart and a coefficient plot. An example of this chart is presented in Figure 54.[37]

On the very left side of the chart, the names of the indicators are displayed. Next to the names, a horizontal bar chart is used to show the mean levels of the indicator among households living in communities where the CDGP is not present and is present, in dark blue and green respectively. These means are expressed in percentage points for dichotomous indicators and in the relevant unit of measurement for continuous indicators; the unit of measurement is always reported on the horizontal axis at the bottom of the bar chart.

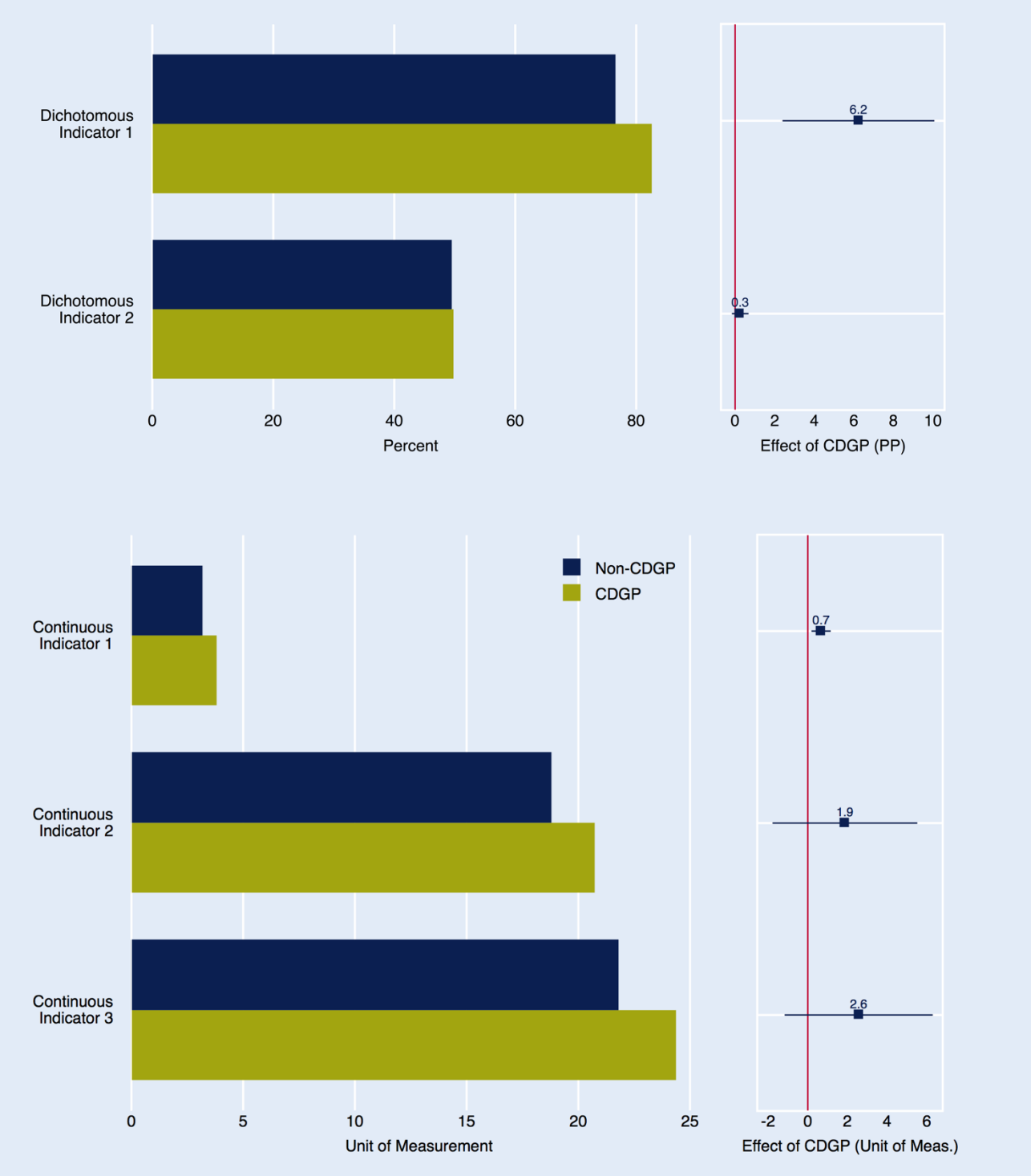
The rightmost section of the graph shows the effect of the CDGP on the indicator in a coefficient plot. A vertical red line denotes zero (no effect) as a reference point. A dark blue square with a number on top represents the estimate of the mean effect of the CDGP on the indicator, expressed in the same unit of measurement as the means in the horizontal bars to the left. This estimate is the same as the one reported in the tables that represent effects of the CDGP, exemplified in Table 33. The more to the right (left) of the zero line this point is, the larger the positive (negative) effect of the CDGP on the indicator.

A horizontal dark blue line shows the 95% confidence interval for the estimate of the mean. This interval is directly proportional to the standard error of the mean effect, and conveys the precision of our estimate of such effect. The narrower the interval, the more precise the estimate.[38] If the

[37] It is important to notice that the means and the estimates of the effects presented in these figures are equivalent to the ones presented in the tables for effects, e.g. Table 33.
[38] In particular, the confidence interval represents the following probabilistic idea: if we were able to draw a large number of sample of the same size or the CDGP sample from the reference population, we would expect the mean of the indicator to fall within the confidence interval in 95% of the cases.

confidence interval does not overlap with the vertical zero line, it means that the effect is statistically different from zero at the 95% level.

Figure 54: Example figure: Effects



Notes: Left panel shows mean levels of the variable in non-CDGP and CDGP areas. Right panel shows the size of the effect of the CDGP on the same variables, where the number and square are the point estimates and the dark blue line is the 95% confidence interval.

A.3 Figures for standardised effect sizes

The effects of the CDGP as presented in the previous type of chart – and in the main tables in the report – are expressed in the same unit of measurement as the original indicator. It is thus readily apparent if the size of these effects is large or small with respect to the level of the variable.

As shown in Section 2.2, the effect of the CDGP is calculated as an (adjusted) difference between the mean in the CDGP group and the mean in the non-CDGP group, approximately:

$$\text{Effect} = \text{Mean(CDGP)} - \text{Mean(Non-CDGP)}$$

Another way to express the effects of the CDGP is in terms of standardised effect sizes. There are various formulations for effect sizes, but for this report we use Glass's Delta, defined as:

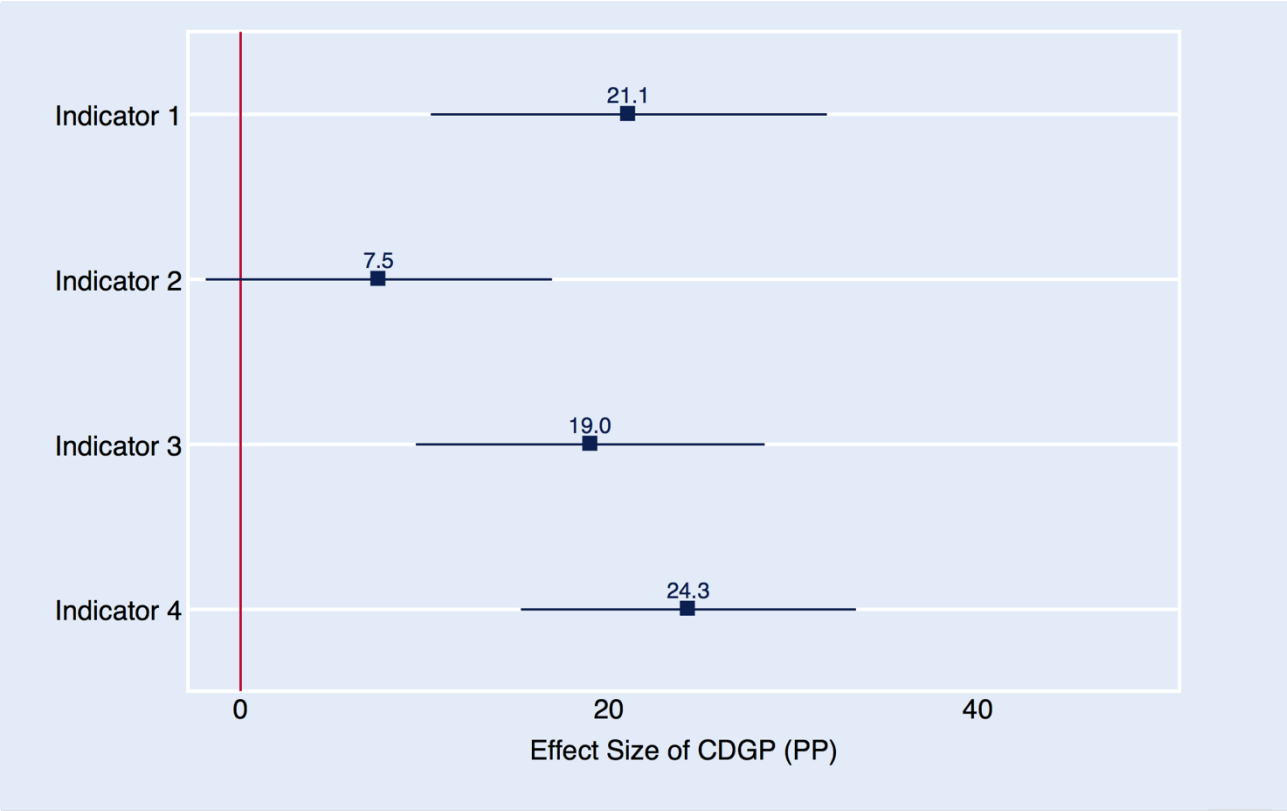
$$\text{Standardised Effect Size} = \frac{\text{Effect}}{\text{SD(Non-CDGP)}}$$

In other words, we standardise the effect using the standard deviation in the non-CDGP group. This operation 'rescales' the effect by making it relative to the variation that the indicator exhibits in the non-CDGP group. It thus gives an idea not only about the statistical significance of each effect but also of its relative size, which makes the effect sizes of different indicators comparable.

An example of a standardised effect size chart is presented in

Figure 55. It works in substantially the same way as the rightmost panel in the effect figures discussed above, where the square indicates the estimated effect size and the line indicates the confidence interval. In the additional results in Volume II, we often employ this type of figure.

Figure 55: Example figure: Standardised effect size



Notes: The graph represents effect sizes, i.e. the effects of the CDGP divided by the standard deviation of the variable in the non-CDGP group. The number and square are the point estimates and the dark blue line is the 95% confidence interval.

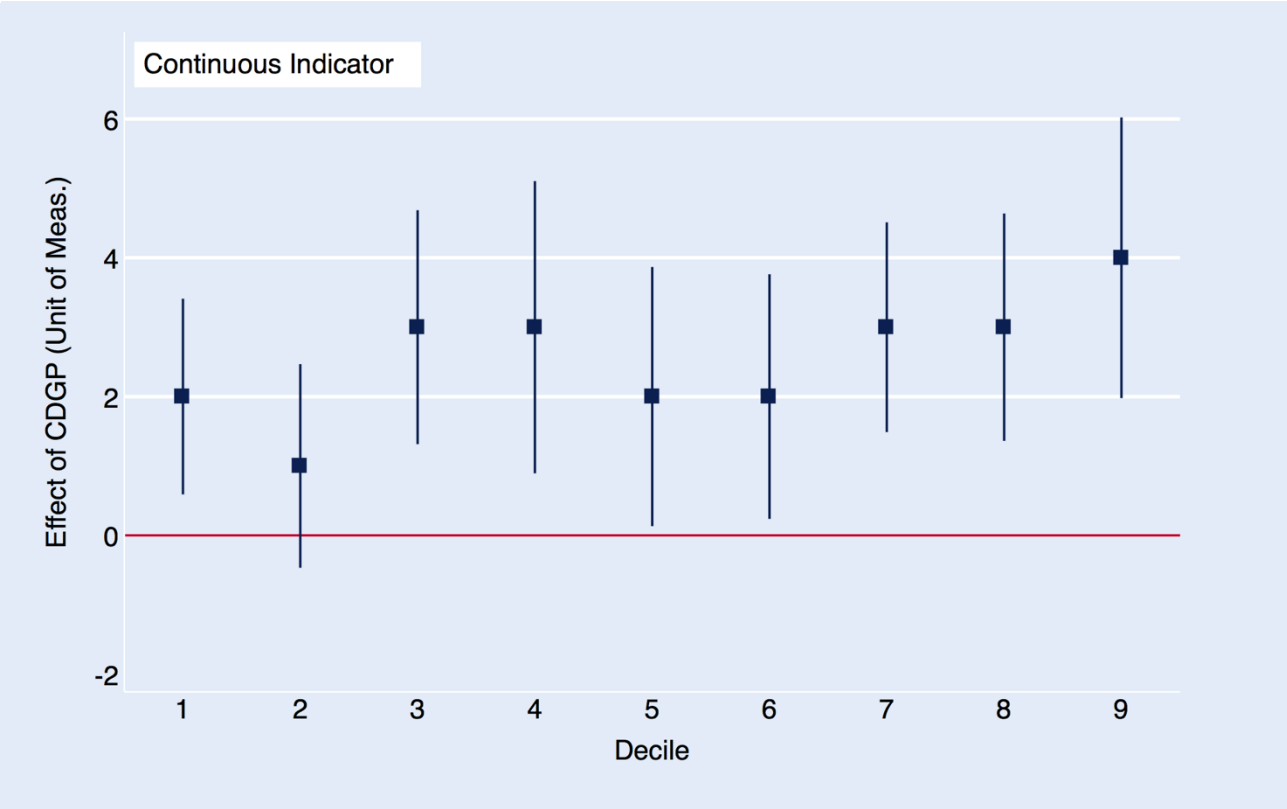
A.4 Figures for quantile effects

It is sometimes of great interest to assess the effects of the CDGP not only on the mean of a continuous indicator but also on its distribution.[39] For example, it might be the case that the effect of the CDGP on children's weight is larger for children that are thinner; presenting only the effect on mean weight might confound this aspect. To shed more light on this, we present some results from quantile regression for a select group of indicators, e.g. earnings, expenditures, children's anthropometric measurements, etc. (see Volume II for details on this methodology).

An example of a quantile effect chart is in Figure 56. The interpretation of these charts is very similar to the effect coefficient plots presented above, where the estimates are denoted by dark blue squares and the confidence interval is the dark blue line on both sides. However, instead of showing the mean effect of the CDGP on different indicators, it shows the effect of the CDGP at different points (quantiles) of the distribution of the same indicator. Also, the chart's axes are reversed, so that lower to higher quantiles are intuitively shown from left to right. We choose to present nine deciles, which correspond to the 10th, 20th, 30th, …, 90th percentiles of the distribution.

[39] This is not applicable to dichotomous indicators, which have discrete distribution.

Figure 56: Example figure: Quantile effects

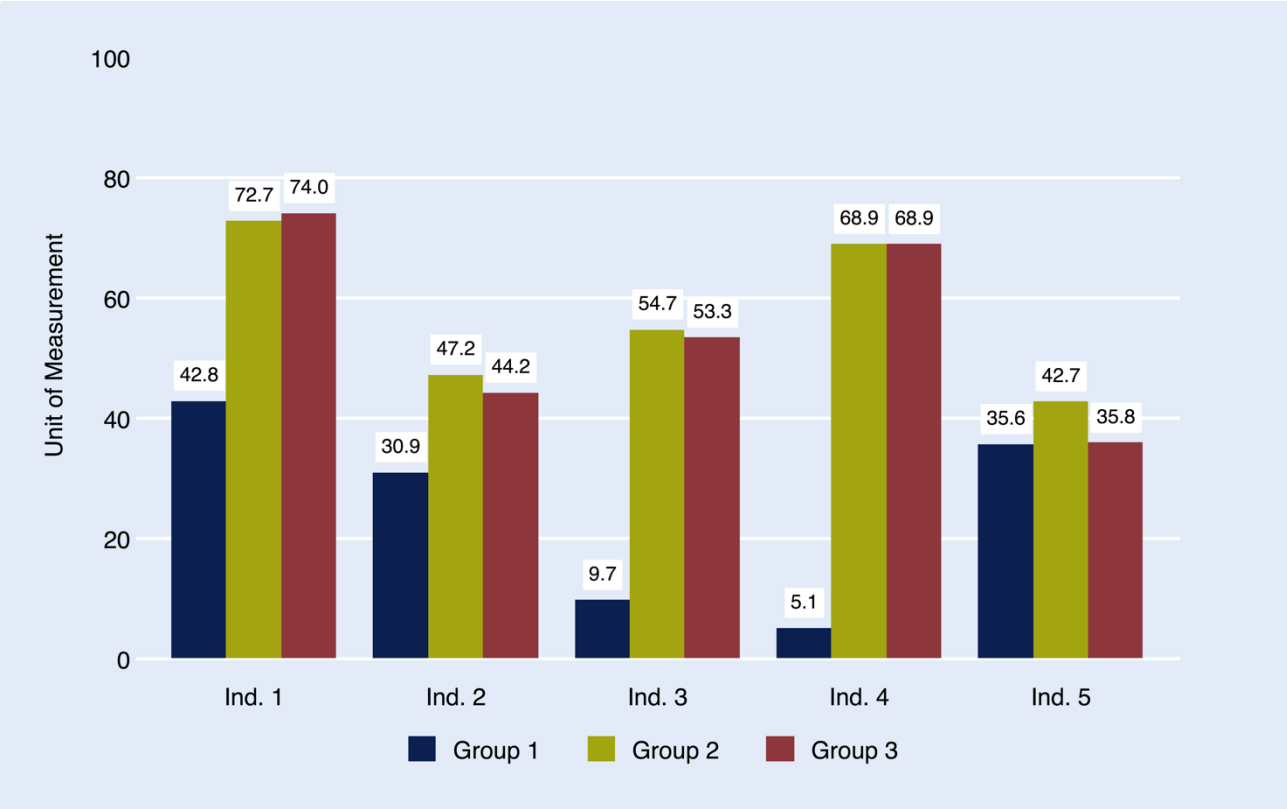


Notes: The chart depicts the effect of the CDGP on different deciles of the distribution of the continuous indicator. For each decile, the square is the point estimate and the dark blue line is the 95% confidence interval.

A.5 Figures for distributions of categorical data

An example of a bar chart is presented in Figure 57. This chart presents one or more indicators disaggregated by the categories of another variable (e.g. percentage of communities affected by flood, disaggregated by LGA). The mean value of the indicator in each category can be read on the vertical axis.

Figure 57: Example figure: Bar chart



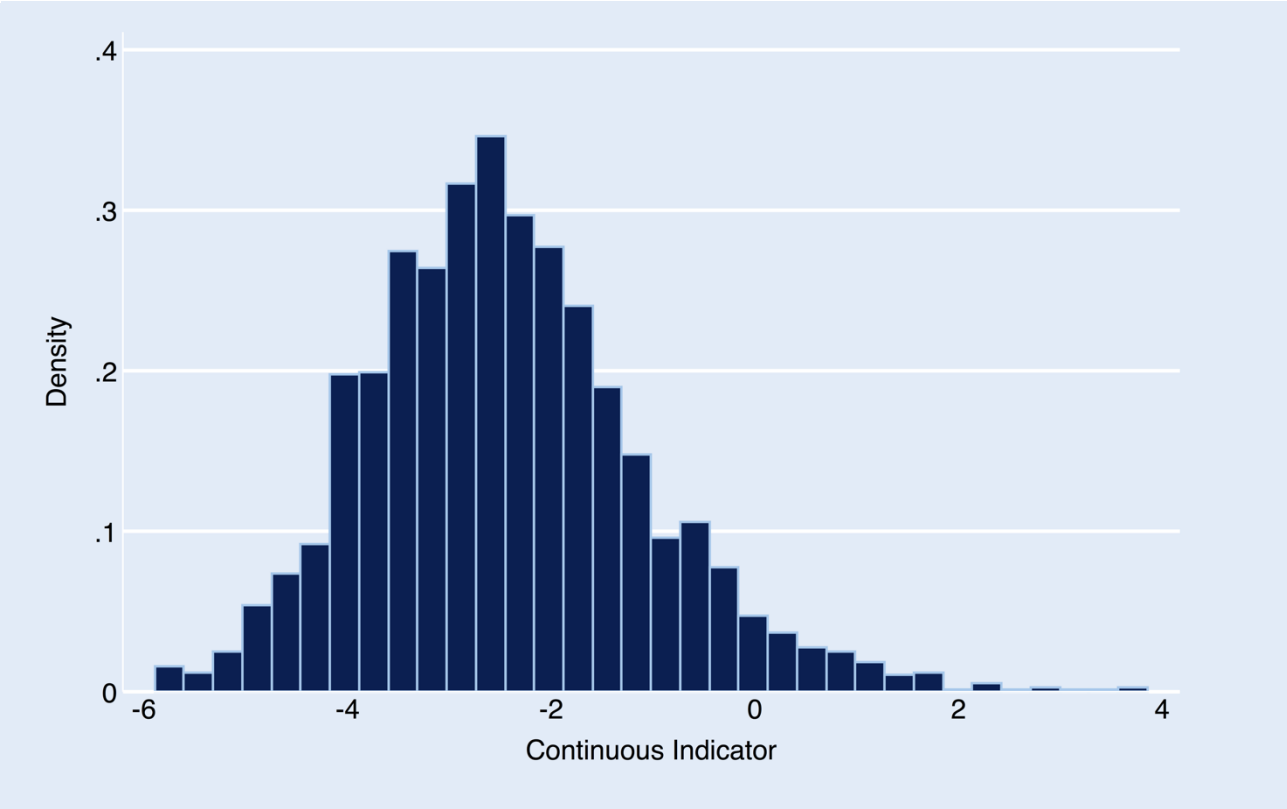
Source: CDGP midline data.

A.6 Figures for distributions of continuous data

In the report we sometimes show how a continuous indicator is distributed in the population. One way to do this is to use a histogram such as the one in Figure 58. On the horizontal axis is the continuous variable we are interested in. This variable is divided into intervals of equal length: for each interval, the number of observations lying within that interval is represented by the length of a vertical bar, which can be read on the vertical axis. This figure enables us to immediately see which values of the continuous variable are most common in the sample.[40]

[40] We use this type of figure also to represent the distribution of discrete indicators that take many values, such as date of interview.

Figure 58: Example figure: Histogram



Source: CDGP midline data. Notes: Graph shows a histogram of a continuous indicator.

Annex B Treatment on the treated

As illustrated in section 2.2, all estimates of the effect of CDGP contained in this report are 'intention-to-treat' (ITT). This means they are derived from the comparison of households residing in CDGP areas versus non-CDGP areas, regardless of whether women in those households who were pregnant at baseline actually participated in CDGP. Alternative approaches are available for recovering estimates of the impact on households where women did actually participate. Such estimates are known as the 'treatment on the treated' (ToT).

The ITT approach has the main advantage of abstracting from possible risks of selection bias. Comparing the outcomes of women who participated in the CDGP intervention with those who did not can result in misleading conclusions if these two groups are systematically different from one another in other respects, aside from their participation in the CDGP. Furthermore, the nature of the CDGP intervention makes it less than straightforward to define *participation* in the first place, which is needed for estimating ToT. For example, defining participation as having received at least one payment will lead to different estimates than defining it as having received at least a year's worth of payments. This becomes even more problematic when considering the informational component of CDGP, where exposure is more imperfectly measured and the concept of participation or receipt of the programme is more ambiguous. This is because there are multiple BCC channels so many different possible definitions are possible[41]. Each different definition of participation in CDGP would give different ToT results and thus is highly subjective. Given these limitations, we prefer ITT estimates for the body of the report.

However, while being robust to selection issues and different definitions of participation, ITT estimates are likely to underestimate the effect of actually receiving the CDGP intervention. This is because some women who were pregnant at baseline living in CDGP areas never ended up participating in CDGP, while some women who were pregnant at baseline living in non-CDGP areas did in fact participate in it.(see section 3). Therefore, in the interest of providing a complete picture of the impacts of CDGP, we provide ToT estimates in this section.

To calculate ToT estimates, we define receipt of CDGP as having received at least one grant payment, regardless of whether the household resided in a CDGP village. We do not consider the BCC component in this definition, since exposure to communication activities is harder to measure and might lead to estimates that are hard to interpret.

We estimate an instrumental variable model, where we regress each outcome on the receipt indicator and instrument this indicator with a dummy for the household residing in a CDGP village. This procedure recovers a particular type of Treatment on the Treated known as Local Average Treatment Effect, or LATE (Imbens & Angrist, 1994): it is the average impact of CDGP on *compliers* – that is, households in CDGP villages where women have participated in CDGP.[42] We believe that this subgroup represents many of the CDGP households, given the high take-up rate in CDGP villages and the low contamination in non-CDGP areas.

The idea behind a LATE estimation is that there are two different treatment statuses: assignment to treatment and receipt of treatment. In our case, it would mean being in a treatment community (assignment) versus actually getting the cash transfer or BCC (receipt). The key assumption for the LATE estimation is the following: being assigned to treatment (i.e. living in a CDGP village) has no

[41] For example: having been exposed to at least one BCC channels, or two BCC channels, or having attended at least one food demonstration plus one other BCC channel etc.
[42] The main assumptions behind this technique are that CDGP affects outcomes only through receipt of the grant (*exclusion restriction*), and that there are no women that would receive the grant only if they were *not* offered it, but would *not* receive it if they were offered it (*monotonicity*).

effect on the outcome variable of interest. *Only actually receiving the treatment has an effect on the outcome.*

There are two issues with the LATE estimation for CDGP. First, the difficulty of clearly defining participation in CDGP is a problem here. We do not have a clear 'receipt of treatment' indicator because CDGP of course operates via two channels – i.e. cash and BCC. If we take either of those as the receipt of treatment indicator, then the assumption above does not hold. For example, if we say receipt of treatment is receiving cash, then it could be that individuals that did not receive this treatment still got access to BCC – and if this has an effect of them then they were affected by the programme not through the cash but just because they were also living in a CDGP village. The outcome indicator would be affected just because the household was in a CDGP village and this contradicts the assumption above. In theory, we could create a composite indicator that combines receiving cash or BCC. But the problem with this is we don't really know who got the CDGP BCC because we are sure that a lot of the reported access to BCC did not come from CDGP (as evident by high BCC in control). The second issue is because many of our indicators are related to knowledge/behaviour around IYCF practices, spillovers are quite relevant. If a mother was exposed to BCC, she may tell others in the same village about it. This means that other mothers in the same CDGP village are possibly changing behaviour/knowledge just because they are in the assignment area as well. Therefore again the assumption above does not hold.

Despite these issues, at the request of reviews of the report, we are including some estimates of the LATE. In Table 35, we present ITT and LATE estimates for a subset of key indicators from the report. The formatting of the table is slightly different than other tables in this report. The first four columns report the number of observations and the mean for each indicator, for households residing in non-CDGP and CDGP villages, respectively. The fifth and sixth columns present the same information for the subset of households where women report having received at least one payment from CDGP, i.e. household for which the receipt indicator defined above is equal to one. Finally, the last two columns present the ITT estimate (the same as the rest of the report) and the LATE estimate, which is defined in this section.

Table 35 shows that, as expected, LATE estimates are always larger than ITT estimates. This is predictable, since LATE takes into account the fact that some households in CDGP areas have not participated and some households in non-CDGP areas have received the grant, thereby inflating the ITT estimates. However, the overall picture of the impact of CDGP in terms of significance does not appreciably change – that is, the same indicators where we find a statistically significant effect of the CDGP when measured through an ITT specification are also significant when estimated by LATE, and there are no additional indicators emerging as significant when impact is estimated using LATE.

Table 35 ITT vs LATE estimates

	Midline						ITT	LATE
	Non-CDGP		CDGP		Received grant			
	N	**Mean (SD)**	**N**	**Mean (SD)**	**N**	**Mean (SD)**	**Mean (SE)**	**Mean (SE)**
Women's work and food security								
% of women with any paid or unpaid work in the past 12 months†	1009	**76.6**	2109	**82.7**	1816	0.8	**6.23*** **	**8.22*** **
							(1.94)	(2.47)
Women's monthly earnings, NGN††	988	**3,270.1**	2067	**3,845.5**	1783	4004.7	**607.90** **	**798.17** **
		(5,301.1)		(5,589.4)		(5,708.1)	(250.36)	(315.70)
Women's and husbands' monthly earnings, NGN††	792	**27,252.7**	1709	**29,760.0**	1404	29,976.0	2,670.20	3,339.85
		(43,638.8)		(46,125.1)		(46,248.8)	(2,400.81)	(3,268.65)

	Midline						ITT	LATE
	Non-CDGP		CDGP		Received grant			
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	Mean (SE)	Mean (SE)
% households without enough food some time in past year	1009	**28.6**	2109	**23.5**	1816	0.2	**-7.17*** **	**-9.45*** **
							(2.34)	(3.01)
Women's knowledge and attitudes								
% would advise a pregnant woman to visit a health facility if she's healthy	1009	**83.0**	2109	**91.5**	1816	0.9	**7.90*** **	**10.42*** **
							(2.04)	(2.57)
% think best to start breastfeeding within 30 minutes of birth	1009	**42.4**	2109	**68.6**	1816	0.7	**26.17*** **	**34.51*** **
							(2.78)	(3.35)
% think the best place to give birth is at a health facility	1008	**22.7**	2106	**36.8**	1814	0.4	**12.90*** **	**17.00*** **
							(3.02)	(3.80)
Nutrition, nutritional status, and skills of children born after the start of CDGP (i.e. born after the baseline)								
% receiving 4+ food groups at 6-23 months†††	534	**39.5**	1349	**51.5**	1186	0.5	**12.72*** **	**17.22*** **
							(2.55)	(3.14)
% receiving minim. feeding times at 6-23 months†††	533	**57.0**	1349	**63.4**	1186	0.6	**6.66*** **	**8.69*** **
							(2.46)	(3.13)
% receiving minim. acceptable diet at 6-23 months†††	534	**13.7**	1349	**20.8**	1186	0.2	**7.55*** **	**9.69*** **
							(2.23)	(2.78)
MDD Indicator (WHO)††††	847	**3.01**	1747	**3.39**	1506	3.45	**0.39*** **	**0.51*** **
		(1.36)		(1.35)		(1.34)	(0.07)	(0.08)
Height-for-age (HAZ)†††††	851	**-2.57**	1819	**-2.39**	1584	-2.34	**0.21*** **	**0.25*** **
		(1.34)		(1.36)		(1.38)	(0.07)	(0.09)
% who are classed as stunted (HAZ<-2)	851	**70.5**	1819	**65.0**	1584	0.6	**-6.10** **	**-7.68** **
							(2.36)	(3.02)
Weight-for-height (WHZ)†††††	851	**-0.54**	1819	**-0.66**	1584	-0.65	**-0.11** **	**-0.15** **
		(1.13)		(1.15)		(1.14)	(0.05)	(0.06)
% who are classed as wasted (WHZ<-2)	851	**10.2**	1819	**12.3**	1584	0.1	**2.13***	**2.68***
							(1.25)	(1.62)
ASQ Communication Skills	807	**25.1**	1721	**26.5**	1490	26.8	1.28	1.68
		(16.6)		(17.2)		(17.0)	(0.96)	(1.23)
ASQ Motor Skills	807	**35.8**	1721	**37.5**	1490	38.4	1.60	**2.15***
		(17.9)		(18.4)		(18.0)	(1.02)	(1.28)

Source: CDGP midline data. Notes:

7. The sample is women who were pregnant at the time of the baseline survey in 2014. We interviewed this pregnant woman and her husband and also asked questions about her children. At midline, we interviewed the same people.
8. Mean = unweighted estimate of the mean. SD is reported for continuous indicators only.
9. ITT = the difference in means between CDGP and non-CDGP communities at midline. Estimated by OLS regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
10. LATE = average impact of CDGP on *compliers*, estimated by instrumental variables. Estimated by two-stage least squares regression with LGA fixed effects and SEs clustered at the village level. Significance levels: * (10%), ** (5%), ***(1%).
11. Means, effects and differences are measured in percentage points for binary and categorical indicators. For continuous indicators, they are measured in the relevant unit of measurement.

†Excluding housework and childcare.

††Derived by summing earning across all work activities. Values above the 99th percentile are put to missing. This includes zeros for subjects who report no paid activities. The sum of woman and husband earnings is btained by summing women's and men's earnings. Missing if man's earnings are missing.

†††See Volume II and World Health Organization Indicators for assessing IYCF practices (WHO, 2008, p. pp. 33 ff.) for the exact definitions and details for these indicators.

††††The seven food groups used for calculation of this indicator are: (1) grains, roots and tubers; (2) legumes and nuts; (3) dairy products (milk, yoghurt, cheese); (4) flesh foods (meat, fish, poultry and liver/organ meats); (5) eggs; (6) vitamin A-rich fruits and vegetables; and (7) other fruits and vegetables.

†††††All Z-scores are computed using 2006 WHO growth charts, and cleaned by the standards described therein (WHO, 2006).