

Title: Cash, COVID-19, and aid cuts: A mixed-method impact evaluation among South Sudanese refugees registered in Kiryandongo settlement, Uganda

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SUPPLEMENTAL MATERIALS

Tables and Figures

Table S1 Test of balance in means of characteristics of treated and untreated households at baseline, 2019

Variable	(1) No cash transfers		(2) Received cash transfers		t-test (1)-(2)
	N	Mean/SD	N	Mean/SD	Difference in means
Gender of Household Head	456	0.765 [0.424]	485	0.728 [0.446]	0.038
Household Size	456	9.331 [4.266]	485	8.654 [3.980]	0.678**
Time in Settlement	456	2170.866 [1965.956]	485	2208.482 [2092.456]	-37.616
Ethnic Acholi / Luo	456	0.215 [0.411]	485	0.206 [0.405]	0.009
Ethnic Dinka	456	0.25 [0.433]	485	0.233 [0.423]	0.017
Ethnic Nuer	456	0.241 [0.428]	485	0.148 [0.356]	0.093***
Ethnic Bari (Mundavi, Kuku, Kakwa, Pajulu, Nyangwara)	456	0.125 [0.331]	485	0.161 [0.368]	-0.036
Other Ethnicities	456	0.169 [0.375]	485	0.252 [0.434]	-0.083***
At least Secondary Education	456	0.336 [0.473]	485	0.384 [0.487]	-0.048
Total Monthly Consumption Expenditure Per Capita (PPP)	456	125.106 [91.801]	485	124.046 [81.930]	1.059
Total Food Consumed Monthly (PPP)	456	506.441 [320.763]	485	479.554 [297.693]	26.887
Psychology Well-Being Index	456	-0.093 [0.985]	485	0.057 [0.999]	-0.150**

*Note: The table reports means of baseline characteristics by treatment group for households who answered in at least one of three survey rounds. (N=941). The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.*

Table S2 Test of balance in means of characteristics by Response at baseline, 2019

Variable	Overall			Round 1			Round 2			Round 3		
	(A) Not Responded (n = 323)	(B) Responded (n = 941)	(A)-(B)	(C) Not Reached (n = 631)	(D) Reached (n = 633)	(C)-(D)	(E) Not Reached (n = 634)	(F) Reached (n = 630)	(E)-(F)	(G) Not Reached (n = 612)	(H) Reached (n = 652)	(G)-(H)
Gender of Household Head	0.712	0.746	-0.034	0.739	0.736	0.002	0.721	0.754	-0.033	0.708	0.765	-0.058**
Household Size	8.474	8.982	-0.508*	8.933	8.771	0.163	8.672	9.033	-0.361	8.709	8.986	-0.277
Time in Settlement	1892.201	2190.254	-298.053**	1958.081	2269.607	-311.526***	2106.103	2122.129	-16.026	2032.783	2190.41	-157.627
Ethnic Acholi / Luo	0.152	0.21	-0.059**	0.135	0.256	-0.121***	0.188	0.203	-0.015	0.18	0.21	-0.030
Ethnic Dinka	0.183	0.241	-0.059**	0.216	0.237	-0.021	0.188	0.265	-0.077***	0.198	0.253	-0.055**
Ethnic Nuer	0.303	0.193	0.110***	0.309	0.134	0.175***	0.233	0.21	0.024	0.257	0.189	0.068***
Ethnic Bari	0.099	0.143	-0.044**	0.106	0.158	-0.052***	0.118	0.146	-0.028	0.129	0.135	-0.006
Other Ethnicities	0.263	0.211	0.052*	0.235	0.215	0.020	0.273	0.176	0.097***	0.237	0.213	0.024
At least Secondary Education	0.263	0.36	-0.097***	0.311	0.36	-0.050*	0.32	0.351	-0.031	0.302	0.367	-0.064**
Total Monthly Consumption Expenditure Per Capita (USD PPP)	126.585	124.559	2.026	121.858	128.287	-6.429	123.747	126.416	-2.669	124.773	125.363	-0.589
Total Food Consumed Monthly (PPP)	461.514	492.584	-31.070	470.192	499.05	-28.858	469.287	500.099	-30.812*	476.67	492.129	-15.460
Psychology Well-Being Index	0.046	-0.016	0.062	0.064	-0.064	0.128**	0.04	-0.04	0.080	-0.046	0.043	-0.090

Note: This table compares the means of the reached and unreached groups for each round at baseline, indicating the selection bias. The values displayed for t-tests are the differences in the means across the groups. * * *, *, and * indicate significance at the 1, 5, and 10 percent critical level. Ethnic Bari includes Mundavi, Kuku, Kakwa, Pajulu, Nyangwara

Table S3 Treatment Effects on Household Dietary Diversity

Food Group	Treatment effect			95% CI		(6) p-value	(7) N
	(1) Control Mean	(2) Unweighted	(3) Weighted	(4) Unweighted	(5) Weighted		
Cereals	0.188	0.011	0.009	[-0.080, 0.040]	[-0.050, 0.069]	0.756	630
Roots	0.14	0.07**	0.065**	[0.004, 0.122]	[0.005, 0.125]	0.033	630
Vegetable	0.912	0.009	0.014	[-0.033, 0.054]	[-0.029, 0.057]	0.525	630
Fruits	0.13	0.048	0.056*	[-0.002, 0.112]	[-0.003, 0.115]	0.063	630
Meat	0.039	0.032*	0.037*	[0.001, 0.074]	[-0.002, 0.075]	0.062	630
Egges	0.019	0.022	0.022	[-0.008, 0.045]	[-0.008, 0.052]	0.149	630
Fish	0.13	0.059**	0.054*	[-0.010, 0.102]	[-0.002, 0.111]	0.059	630
Pulses	0.172	0.043	0.044	[-0.047, 0.073]	[-0.017, 0.105]	0.158	630
Milk	0.068	0.019	0.02	[-0.046, 0.030]	[-0.022, 0.062]	0.346	630
Oil	0.987	0.013**	0.013*	[0.001, 0.026]	[-0.000, 0.026]	0.055	630
Sugar	0.718	0.067*	0.069**	[0.014, 0.148]	[0.000, 0.138]	0.049	630
Other	0.445	0.054	0.055	[-0.001, 0.154]	[-0.025, 0.134]	0.179	630

Note: This table reports treatment effects on outcomes of Household Dietary Diversity, which constitute the Household Dietary Diversity Score(HDDS) in table 3. The treatment effects are calculated using ANCOVA analysis by controlling for the baseline values of the outcomes. All regressions control household characteristics including the gender of household head, household size, time in settlement and different ethnicities. Column (1) shows the means of the control group. Column (2) and (4) show the unweighted treatment effects estimates and 95% confidence interval. Column (3) and (5) are weighted by inverse probability weights. Columns (6) shows the p-values(weighted). Columns (7) shows the number of observations. Data are collected in round 2. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure S1 Timeline of phone surveys and COVID-19 related events

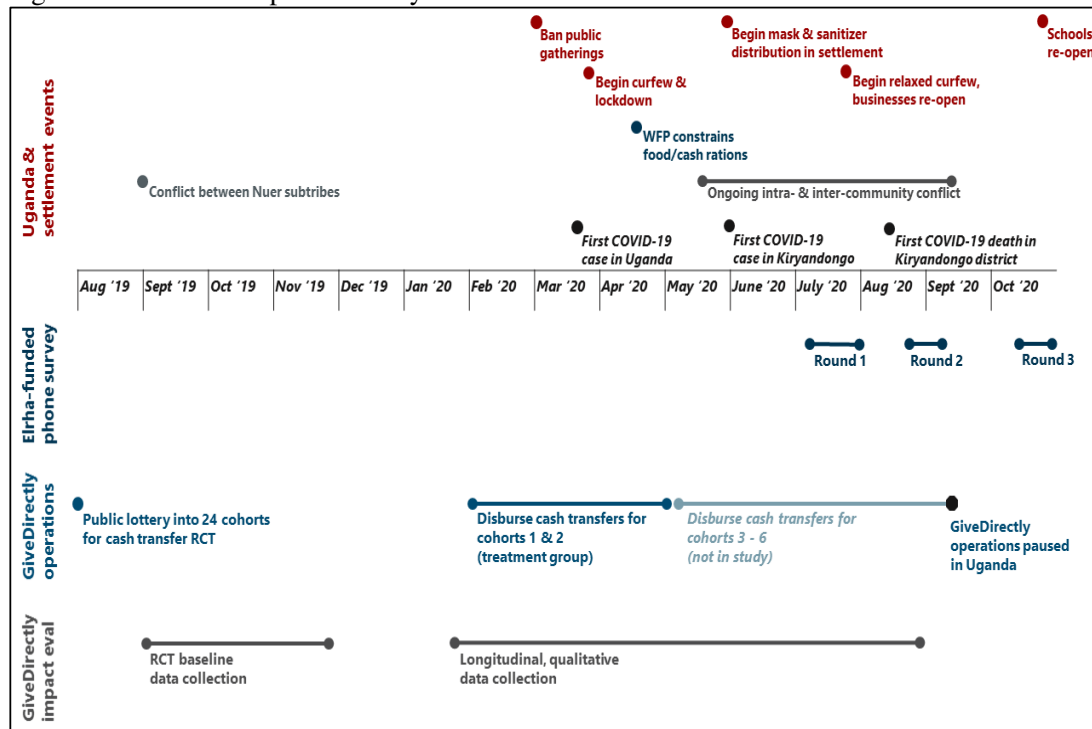
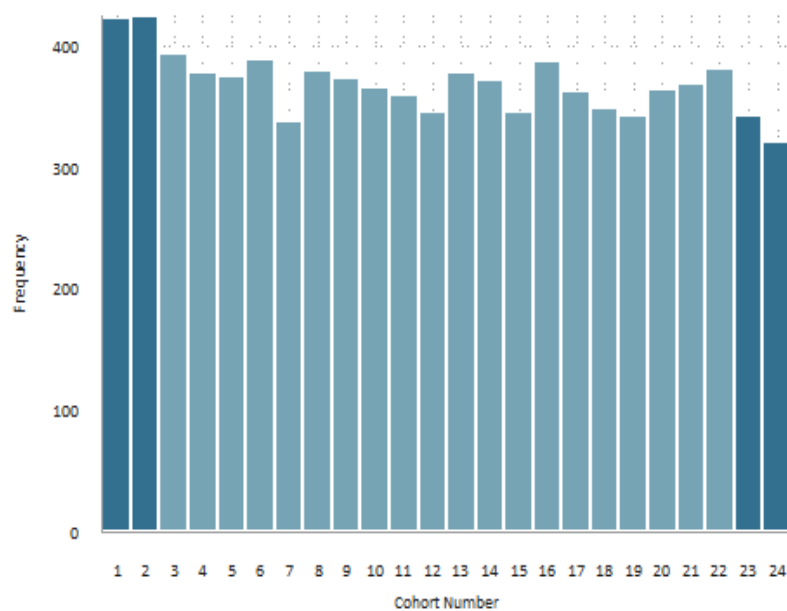


Figure S2: Histogram of Cohort Number



Structured ethics appendix

Asiedu and colleagues [1] inform this structured ethics statement

1. Equipoise

The evaluation design used here (phase-in/stepped wedge) is justified on the grounds of an operational and budget constraint, rather than being in a state of true equipoise. In general, that cash transfers can bring about desirable impacts is well-documented, including in East Africa. That said, this is among the first, to our knowledge, impact evaluations of a large, one-off cash transfer in a site of protracted displacement; it represents GiveDirectly's second foray into working in refugee settlements (just before Kiryandongo, they worked in Kyaka II, in part as a test of operational feasibility). A literature review demonstrates limited available evidence on the effects of *large* unconditional cash transfers in contexts of protracted displacement, including when these contexts are subject to shocks such as COVID-19. Literature that does exist largely focuses on the economic impacts of cash transfers; little evidence is available on the influence of cash transfers on public health measures

Despite previous studies, we believe that there were some genuine points of uncertainty and concern that warranted deep investigation. First, there were real concerns about inducing scarcity and inflation in the context of the settlement (which in part also drove the decision to phase-in the transfers). Second, there was uncertainty about the limitations of cash in the refugee context, given that investment opportunities are constrained by refugee status and preferences will be shaped by deep uncertainty. Third, there was uncertainty and concern as to whether in a context of tension among refugees as well as between refugees and host Ugandan communities, would relationships become tenuous once the cash was added in.

2. Role of Researchers Concerning Implementation

The research and implementation team were generally completely separate. The research team played two minor roles in implementation, none of which stemmed from bringing our funding to implementation, having decision-making power over key implementation decisions, or having GiveDirectly staff report to IDinsight in any way. First, IDinsight helped to design the lottery to determine the order of transfer receipt, including the operational details of executing the lottery. Second, throughout quantitative and qualitative data collection, our enumeration and interview teams were equipped to answer a few clarifying questions about the cash transfer as well as to direct respondents to GiveDirectly's hotline. Otherwise, GiveDirectly and the research team kept each other well informed about progress and shared data when formally agreed but maintained separation.

3. Potential Harms to Research Participants from the Interventions or Policies

In this case, the research team was not "active" in the intervention and measuring potential harms from cash transfers in a refugee settlement is part of the research aim. Also, there is

relatively small time input required from registered households to participate in the intervention: attendance at a community meeting (baraza), participating in the lottery (coupled with food distribution), and participating in enrollment and audit visits.

The potential harms of receiving a cash transfer under investigation relate to the potential for conflict or violence within a household or family, such as on how to make use of the transfer, as well as the repercussions of some potential uses, like excess alcohol consumption. To our knowledge, there was one serious case of intra-household violence that arose directly from the transfer.

There are also potential harms from not being among the earlier cohorts to receive a transfer—even when you think the lottery was the fairest possible process. These can include feeling bad and jealous. The transfers, even though staggered, have the potential to lead to inflation in the settlement and beyond, which we track to some extent in our work. Finally, it is possible that until everyone receives their transfer, the cash provides fodder for conflict within and between groups.

Finally, a note on COVID-19 and the reasoning for not aiming to get everyone cash as soon as Uganda went into lockdown. First, the operational constraints that justified a randomised phase-is design in the first place (described under ‘Equipoise,’ above) were still in place. On top of this, it took some time for GiveDirectly to update their operations to work fully remotely. Secondly, GiveDirectly was gearing up to speed up its rollout, in October 2020, when its licence to operate in Uganda was at the time suspended (it is now reinstated (<https://www.givedirectly.org/wp-content/uploads/2020/11/202011-GiveDirectly-Uganda-Press-Release.pdf>)). Therefore, even had GiveDirectly been able to speed up transfers in face of the pandemic, they were unable to.

GiveDirectly’s licence has been reinstated by the Government of Uganda as of November 2021. Disbursement of the cash transfers to the refugee households will be commencing accordingly.

4. Potential Harms to Research Participants from Data Collection (e.g., Surveying, Privacy, Data Management) or Research Protocols (e.g., Random Assignment)

Our data collection procedures were adherent to confidentiality and informed consent protocols, as approved by Mildmay [0101-2019] and UNSCT in Uganda [SS281ES] and IDinsight’s internal ethics processes. Protocol and the motivation behind it were covered in-depth in training for data collection and reinforced through audio audits—including specifically consent-and spot-checks. We used strict data security protocols. All data were collected, encrypted, and uploaded to a secure central database. We stored back-ups on password-protected computers and folders to ensure the confidentiality of the data. The encrypted raw data was only available to the research management team.

We engaged in a layered process of community entry, though did not formal community consent. To enter communities or specific clusters in the settlement, IDinsight started by informing the Office of the Prime Minister Commandant and Deputy Commandant for the Kiryandongo settlement; we met multiple times with them throughout baseline data collection. The settlement is geographically divided into clusters, each of which has an elected leader; during baseline, we held meetings with cluster leaders¹ and informed them before entering their respective clusters. We further interacted with these leaders throughout baseline data collection.

In addition to the informed consent process, when we first met with potential respondents, we shared a Participant Information Sheet with respondents. In terms of risks to respondents for participation, the main one was the opportunity cost of time and effort spent speaking with our data collection team. We did not compensate respondents at the quantitative baseline; we did provide compensation that covered both electricity usage and mobile data for our three rounds of closed-ended phone surveys. Qualitative respondents were similarly compensated for phone use and time.

Risks to respondents from the questions we asked included both time commitment and sensitive or worrying questions, including those explicitly about psychological well-being, violence, alcohol consumption, and food security. To mitigate the potential for re/traumatization, we made efforts to make sure that respondents had privacy when asking questions, including asking them to go somewhere private when we spoke to them on the phone. In addition, each enumerator and interviewer was equipped with a list of referral resources, such as psychosocial support and legal aid, which we checked were all working numbers.

Because in this case most of our enumeration and interview team were directly part of the community under investigation, we worried about breaches of confidentiality, with people interviewing folks they knew or very similar to them and sharing this with other friends and family in the settlement. We emphasized in training that confidentiality rules extend to all aspects of life and that there would be strict penalties if we heard of data being shared. In daily debriefs, we reinforced this lesson when enumerators over-shared the specifics of an interview they had conducted.

5. Potential Harms to Research Staff

The majority of our data collection team lived in Kiryandongo or another refugee settlement in Uganda. Much of what they saw and heard was difficult but, unfortunately, not necessarily surprising given their lived experience. However, we did touch on difficult topics in our quantitative work and dove deeper into these in our qualitative work. This included hearing about despair and suicidal ideation and being viewed by respondents as a friend and/or therapists. To support interviewers with these heavy topics, we included regular debriefing times, training on vicarious trauma, and continued conversations on setting boundaries.

¹ IDinsight compensated community leaders for participating in meetings with 10,000 UGX.

6. Scarcity

The inclusion of random assignment did not, in this case, create artificial scarcity. At the outset, GiveDirectly had not secured all the funding needed to saturate the settlement with transfers. In addition, GiveDirectly did not have the operational capacity to enrol, audit, and disburse to all registered households at once. Finally, there was some concern about inflationary pressure if all households were treated at once. Some selection mechanism was required. The decision to randomize the timing of the transfers did not change the aggregate amount of transfers delivered.

7. Counterfactual Policy

Absent the randomized roll-out, households would have received a transfer of the same value from GiveDirectly; the precise timing and randomization mechanism were the only things adjusted for the research. Of course, given both COVID and the Ugandan government's pause of GiveDirectly's programming made the assignment to a specific more consequential than was envisioned at the outset.

To our knowledge, there was not a specific program or policy that would have been put in place absent GiveDirectly's work in Kiryandongo settlement. To the best of our understanding, WFP's decision to curtail their aid was not settlement-specific (Uganda-wide and indeed global) and was orthogonal to GiveDirectly's programming.

8. Researcher Independence

Funding for this original RCT was provided by GiveDirectly. However, GiveDirectly was not involved in the design of the study, analysis of the data, and presentation of the results. Funding for the additional phone surveys during COVID-19 was provided by the nonprofit ELRHA. ELRHA was also not involved in the research process in any other way. Researchers maintained full independence throughout the research process.

9. Financial Conflicts of Interest

None.

10. Reputational Conflicts of Interest

None.

11. Feedback to Participants or Communities

We aim to deliver descriptive data and study results to cluster leaders in the settlement as well as to respondents. The precise way of sharing these results—voice messages for those with WhatsApp, in-person via study enumerators, etc.—will be fit-to-context when the analysis is

mostly complete. As feasible, we would like to have two-way communication when presenting our results to facilitate member-checking of our interpretations.

12. Foreseeable Misuse of Research Results

There is a small chance that, depending on the final research results, politicians in Uganda might have negative responses to these results. In the course of this research, GD and the government of Uganda have been engaged in altercations resulting in the suspension of GD's license to operate in Uganda citing unproven irregularities in GD's operations in Uganda. We, therefore, believe that it might not be far-fetched for politicians to wrongly use the results of this and future GD-linked studies. We will work to contextualize the magnitude of any 'undesirable' outcomes we may find and actively speak to both government officials and Ugandan academics about the impartiality of our analysis and the transparency of the process. In any case, GD was not involved in any other way bar provision of funding – in the data collection, analysis or writing of this manuscript.

13. Other Ethics Issues to Discuss

As noted above, we at times found our respondents--particularly in the qualitative work--raising issues of despair and even suicidal ideation. While we had a referral list for resources, which we checked that they were active and that met local standards of care, we still knew that these resources were unlikely to be adequate psychosocial support for individuals who had experienced such deep trauma.

Reflexivity Statement

The following content is structured according to Table 1 of Morton and colleagues[2]

1. Study conceptualisation

1.1. How did the study address local research and policy priorities?

Uganda currently hosts over 1.5 million refugees and the continuing influx of refugees and protracted conflict in the countries of origin of earlier comers makes understanding how to support refugees a national priority. This project is therefore well-positioned in Uganda's research and policy priorities regarding refugee support. GiveDirectly Uganda, engaged in extensive conversations, listening, and negotiations with the Government of Uganda to ensure the project and the associated research were aligned with national policy on refugees. Specifically GiveDirectly and the research team IDinsight conducted entry meetings with various stakeholders at national and district levels to understand their policy priorities, including the Office of the Prime Minister's Department of Refugees, UNHCR, and WFP. IDinsight also liaised with the Uganda Cash Working Group and Uganda-based researchers, and introduced the study to local leaders in the settlement to discuss the relevance of the research to them and their communities.

Beyond this initial alignment, in April 2020 and again in November 2020, the World Food Programme announced cuts in its rations (food or cash). By 2021, refugees were receiving food aid consisting of only 60% of 2019 portions. This implies that the Government of Uganda and other development organisations would have to consider replacement support to avoid further food vulnerability of refugees. Demonstrating the effects of a cash transfer program could provide a blueprint for other institutions in the region.

1.2. How were local researchers involved in the study design?

The authors of this paper take a broad view of 'researchers,' including those included on the author team and those included in the acknowledgements. In this case, the high-level impact evaluation design—RCT by DS and qualitative by HEL—was completed early in project contracting, before other team members were brought on board.

IDinsight is a global organisation, including with African offices in Dakar, Lusaka, Rabat, and, most relevantly for this project, Nairobi. IDinsight actively seeks both national and international staff with an aim for team members to be citizens or long-time residents of the countries in which offices are located. Full-time staff are allocated to specific projects on the basis of skills and experience, professional development goals, and availability. In addition to this, IDinsight consistently seeks out ways of collaborating with researchers who are locally based have the sectoral expertise most relevant to a particular project.

During training, piloting, and data collection for the RCT, our data collection and field management team—itsself 80% composed of South Sudanese refugees in Uganda at baseline

and 100% for midline—contributed substantively to questionnaire re-wording, translations across multiple languages, contextualizing and interpretation of findings, team management and morale, overcoming operational challenges to high-quality data collection, and commenting on reports generated (mostly with a request for them to be shorter!).

Our team of two qualitative interviewers—one Ugandan and one -South Sudanese were involved in refining our interview guides, scheduled and conducted interviews, transcribed and translated interview recordings and fieldnotes, and regularly helped RB and HEL interpret and sense-check the data during analysis. They also kept RB and HEL apprised of events in the settlement and surrounding area not directly captured in the interviews.

Of the author team, EK (Kenyan and Nairobi-based) led on midline questionnaire design; data collection training, protocol and operations; data analysis; and results-presentation. EN-R (Ugandan and co-founder of the Ugandan research firm Apatha Insights), contributed to analytic design and led on manuscript drafting.

2. Research management

2.1. How has funding been used to support the local research team(s)?

IDinsight contracted Apatha Insights, providing compensation to EN-R, who in turn brought on YL. In addition, this project's RCT enumerators received training and performance feedback throughout data collection, were compensated at a high rate relative to local benchmarks, and all received completion certificates for their CVs, including details about their skills. Our qualitative interviewers received extensive training on technical and soft skills and performance feedback through data collection, translation, and transcription. Again, these interviewers received competitive financial compensation and completion certificates. This coaching, coupled with his own skills and initiative, has facilitated one of these interviewers to gain a more senior role for our endline data collection.



3. Data acquisition and analysis

3.1. How are research staff who conducted data collection acknowledged?

All data collection and field supervision staff are acknowledged by name—with permission from each—at the opening of our paper's acknowledgement section, as well as on IDinsight's webpage for this project (idinsight.org/project/unconditional-cash-transfers-in-kiryandongo-refugee-settlement-uganda/) and on other key deliverables.

Further, we budgeted this project to allow extended time at the project site, not just in Kampala. During midline in 2020, we conducted enumeration and training on phone to limit the risk of COVID-19 transmission due to our work. EK engaged enumerators and conducted remote training on Google Meets and WhatsApp. Due to poor network connectivity in Kiryandongo, we also provided the enumerators with written and pre-recorded training materials. Enumerators also completed quizzes and survey pilots, to evaluate their understanding of the training and surveys. During BL, RB spent around 3.5 months in Kiryandongo together with HEL for ~2 weeks and acknowledged contributor KJZ for ~4 weeks. During the initiation of the qualitative study, RB and HEL spent ~4 weeks in Kiryandongo to train, coach, and pilot with the qualitative interviewers.

3.2. How have members of the research partnership been provided with access to study data?

All members of the author team have had access to (anonymized) survey data, analysis files, and qualitative data through an encrypted shared platform.

3.3 How were data used to develop analytical skills within the partnership?

Our team was multi-skilled in both qualitative and quantitative methods. All team members contributed to the analytical design throughout. For the analysis presented in this paper, to build analytic skills, EK worked closely with DS and HEL on initial quantitative analysis; RB worked closely with HEL on qualitative analysis; and YL worked closely with EN-R and DS on additional quantitative analysis.

4. Data interpretation

4.1. How have research partners collaborated in interpreting study data?

All members of the author team contributed to one or more components of data analysis. All authors participated in joint calls on data interpretation as well as in manuscript review. Further, to contextualize our findings, we regularly consulted with the data collection and field supervision team. GiveDirectly is expanding cash transfers to refugees internationally. The findings from this RCT will provide critical insight on how large cash impacts refugee households and relationships among themselves and host communities as well as how markets respond to influx of cash into refugee communities. In addition GiveDirectly is already

applying lessons learned from programing for the RCT to how it implements cash transfers among refugess communities.

5. Drafting and revising for intellectual content

5.1.How were research partners supported to develop writing skills?

Improving writing skills were key stated professional development goals for RB and EK when joining this project and have worked closely with HEL (and acknowledged contributor Penny Davis) on these skills for other project deliverables. For this manuscript, all project authors contributed directly to as well as reviewed the text, gaining experience through co-author edits and feedback.

5.2.How will research products be shared to address local needs?

We have shared these midline results with our enumeration team as well as in webinars targeted to Africa-based researchers and practitioners, including as led by Elrha and Innovations for Poverty Action specifically (mini-reports from each round of data collection on the [IDinsight website](#)², (and a policy brief summarizing our midline findings is [available on the Elrha website](#)³. During midline, we participated in monthly research partner learning meetings organized by Elrha (one of the research funders). These meetings included other researchers conducting research on COVID-19 effects in Uganda and other countries. We presented our learning during these meetings and also held collaborative follow-up calls with Uganda-based researchers working on COVID-19 research to discuss and triangulate our findings.

We have also shared results with the Uganda Cash Working Group, which brings together local and international actors working to understand whether, when, and in what form cash can be an effective tool to alleviate poverty concerns in the short- and long-term. As we move toward more definitive results at endline, we will: (1) present results back to the data collection team (likely using video notes on WhatsApp) and solicit their feedback, (2) present results back to the community (such as to cluster leaders and settlement leadership), (3) present results to the Uganda Cash Working Group, (4) work with contacts at Ugandan universities, including Makerere, to present to relevant audiences in ways that our contacts think will be most-helpful to themselves and their students, and (5) continue to explore other ways to make sure that our work not only reaches the broad scholarly community through open-access publications but those in Uganda who may find this research useful.

We also plan to present the endline results on the 2022 World Refugee Day to the various stakeholders in Uganda including the Office of the Prime Minister, and refugee support organisations in the country. Findings of the RCT will also be pitched to the local press for national coverage.

² <https://www.idinsight.org/project/unconditional-cash-transfers-in-kiryandongo-refugee-settlement-uganda/>

³ <https://www.elrha.org/project/cash-transfers-and-covid-19-experiences-from-kiryandongo-uganda>

Finally, we selected an open access journal with a key aim of increasing access to all researchers policymakers, development partners and the general public.

6. Authorship

6.1. How is the leadership, contribution and ownership of this work by LMIC researchers recognised within the authorship?

EN-R, the corresponding author and LMIC researcher, led much of the writing and all the revising of the manuscript. The overall authorship team includes 3 LMIC-origin researchers and 3 HIC-origin researchers, with a mix of these currently based in Africa. As each researcher made critical contributions to the research process, we used an author randomisation process to determine the order of authors.

6.2. How have early career researchers across the partnership been included within the authorship team?

Four members of the author team can be assessed as early-career researchers (EN-R, RB, EK, YL). Both EK and RB have received promotions (one and two, respectively) over the course of their involvement in this project, while YL completed her Masters degree.

6.3. How has gender balance been addressed within the authorship?

Three co-authors identify as female (HEL, EK, & YL) and three as male (DS, RB & EN-R). Male and female authors made substantial and equal contributions.

7. Training

7.1. How has the project contributed to training of LMIC researchers?

Whilst training of LMIC researchers—as a separate enterprise from training for junior researchers—was not a core aim of the project, we believe that the experience in research management and implementation (1 LMIC researcher), data analysis and interpretation (3 LMIC researchers) and manuscripts preparation and submission (LMIC researcher + all other team members) will provide enormous experience to researchers involved.

8. Infrastructure

8.1. How has the project contributed to improvements in local infrastructure?

This research project became a collaboration between an international firm (IDinsight) and a Ugandan firm (Apata Insights). As Apata was a young firm at the time of this partnership, the project contributed financially and in experience to Apata's development. Additionally, the project worked with enumerators and field supervisors (many from the refugee community). The experience in data collection gained through the process will have long term value in addition to the short term financial benefits. Anecdotally, we have heard from former and current staff using their salaries to invest in tertiary education, starting businesses, and

developing assets. We have also heard of colleagues who were able to secure additional jobs in the sector after their engagement with IDinsight.

9. Governance

9.1. What safeguarding procedures were used to protect local study participants and researchers?

The research process relied on various levels and dimensions of safeguards in protecting researchers as well as participants

- 1) Ethical review was provided—at multiple points throughout the study—by careful reviewers on the Uganda Mildmay Research and Ethics Committee, who have keen understanding of and experience in protecting vulnerable communities in Uganda. The Uganda National Council for Science and Technology (UNCST) reviewed the Mildmay-approved research protocol and provided final government approval.
- 2) All participants in this study provided informed consent before any data were collected.
- 3) Data transmission from the data collection servers to shared storage platforms was encrypted and only those directly working on the data analysis had access to the encryption keys.
- 4) Data protection: Only the those directly working on data analysis had information about the identities of the surveyed participants. Data provided to the larger research team were de-identified before sharing.
- 5) Enumerators were extensively trained and re-trained on key aspects of ethical research, including informed consent, maintaining privacy during the interviews and confidentiality of data, offering referral information in case special assistance was needed, etc.
- 6) During baseline, we provided our enumerators with safety gear (e.g., helmets) and closely monitored the safety situation in the settlement taking necessary steps to protect the wellbeing of our staff when circumstances required (e.g., halting data collection when there were tribal clashes in the settlement).

References

1. Asiedu E, Karlan D, Lambon-Quayefio MP, *et al.* A Call for Structured Ethics Appendices in Social Science Papers. *PNAS* 2021;118 (29).
2. Morton B, Vercueil A, Masekela R, *et al.* Consensus statement on measures to promote equitable authorship in the publication of research from international partnerships. *Anaesthesia*. 2022;77(3):264-276. doi:10.1111/anae.15597