The comparative impact of cash transfers and mental health interventions*

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1 Introduction

Poverty, depression, and intimate partner violence (IPV) affect millions across Kenya and the rest of the world. Recent research has highlighted various promising interventions to address these issues, such as mental health services to improve psychological wellbeing, and financial support for economic empowerment. This study compares the relative effectiveness of such interventions. Randomly selected households were provided with cash transfers of ∼USD 500; other households were treated with Program Management Plus (PM+), a mental health intervention for low-resource settings developed by the WHO; and a third group households received a combination of cash transfers and PM+. Comparing outcomes of these groups with a control group allows us to determine the causal impact of these interventions. This evaluation constitutes part of a larger study (funded by the Gates Foundation) evaluating the impact of cash and in-kind transfers on a range of welfare outcomes including household consumption, asset values, enterprise activity, nutrition, health, education and psychological well-being. An earlier study by Haushofer & Shapiro (2016) also found some evidence of spillover effects of cash transfers on non-recipient households. One aim of the present study is to replicate these findings.

2 Study design

2.1 Objectives and design

This study will address the following questions:

1. What are the relative impacts of cash transfers and mental health services on IPV, depression, and other outcomes?
2. Is the impact of the combination of cash transfers and mental health services on IPV, depression, and other outcomes greater or smaller than the sum of the individual impacts?
3. Are the impacts of cash transfers and mental health services different for individuals with high vs. low baseline levels of IPV or depression?
4. What are the spillover effects of cash transfers and mental health interventions?
5. If spillovers exist, what mechanism(s) could drive the effects?
6. How do the impacts of cash transfers vary by transfer frequency (5 weekly transfers vs. 1 lump-sum transfer)?

7. Does obtaining access to digital financial services itself impact development indicators without an accompanying cash transfer?

8. Which interventions can incentivize registration for a mobile money account?

To address questions 1–5, we began by randomizing 233 villages into four groups:

1. Cash transfer and PM+ villages (CT/PM+ households): in these 60 villages, 493 individuals were randomly selected to receive both cash transfers and the PM+ intervention. We surveyed only these recipients.

2. Cash transfer villages (CT households and CT spillover households): in these 53 villages, 540 individuals were randomly selected to receive cash transfers. In addition to these 540 households, we also surveyed 1,077 neighboring ("cash transfer spillover") households.

3. PM+ villages (PM+ households and PM+ spillover households): in these 60 villages, 525 individuals were randomly selected to receive the PM+ intervention. In addition to these 525 households, we also surveyed 1,059 neighboring ("PM+ spillover") households.

4. Pure control villages (PC households): households in these 60 villages did not receive either cash transfers of PM+. We surveyed 1,545 households in pure control villages.

To address question 6, we randomly allocated half of cash transfer recipients (in CT/PM+ villages and CT villages) to receiving a lump sum transfer, and the other half a sequence of 5 weekly transfers. This allows us to exploit random variation in transfer frequency to identify differential impacts along this dimension.

To address questions 7 and 8, we identified all respondents who did not yet have a mobile money account in the PM+/CT villages, among the CT spillover group, among the PM+ spillover group, and among the pure control group; a total of 1,132 households. We then randomized 972 of these households to receiving information on digital savings accounts offered through mobile money, as well as an incentive to register for a mobile money account. The incentive was fixed for 50% of this sample (meaning the full incentive was paid no matter when the person registered), or declining (meaning the incentive grew smaller the longer the person waited to register). We account this additional randomization in the econometric specifications addressing questions 1–5.

2.2 Intervention details

2.2.1 Cash transfers

Cash transfer recipients received an unconditional cash transfer of KES 50,000 (∼500 USD) that was is sent directly to their personal MPesa account. MPesa is a mobile money transfer system that allows people to deposit and withdraw money. The cash transfer was delivered either in one lump-sum transfer of KES 50,000, or in five weekly installments of KES 10,000 each. The majority of respondents in our sample had personal MPesa accounts. Respondents who did not have personal MPESA accounts (usually due to not owning a phone) were offered phones which were delivered to their homes, with the retail price (KES 1600) deducted from their cash transfers. They were guided on how to set up an MPesa account. We later revisited these respondents to collect their names and phone numbers after they had registered for MPesa, and compared these data with data from Safaricom (the mobile network provider which operates MPesa). Cash transfers were delivered and overseen by Busara Center for Behavioral Economics. Before sending the respondents a cash transfer, they were contacted over the phone or in person by a Busara field officer, and informed that they had been entered into a lottery and their name had been selected to receive KES 50,000. The field officer emphasized that the cash transfer was entirely unconditional ("The money is yours to do whatever you like with – we have no preferences about what you do with the money. You should use it however you think best."). Consent was obtained before transfers were made.

2.2.2 Problem Management Plus (PM+)

The PM+ intervention consisted of five 90-minute private sessions over five weeks with one session per week delivered by a community health worker (CHW). PM+ aims to help the participants reduce problems that they identify as being of concern to them. The program teaches on five strategies aimed at improving psychological wellbeing: problem-solving, managing stress, managing problems, behavioral activation ("get going, keep doing"), and strengthening social support. Each session has one primary focus: Session 1 orients the client to the intervention so as to improve engagement, provides education about common reactions to adversity, and teaches the participant a simple stress management strategy using breathing exercises. Session 2 addresses a participant-selected problem through problem-solving techniques, and introduces behavioral activation. Sessions 3 and 4 continue to support participants' application of problem-solving, behavioral activation, and relaxation exercises, and introduce strategies to strengthen social support. Session 5 reviews the learned strategies, provides education about retaining treatment gains, and the intervention ends. Each session concludes with 10–20 minutes of the "managing stress" exercise. Participation in the PM+

intervention was entirely voluntary, and participants were free to withdraw at any time. The PM+ intervention was delivered by the international NGO *World Vision*.

2.2.3 Digital Financial Services (DFS)

The aim of the digital financial services intervention was to assess the impact of digital financial services, specifically MPesa, on individual and household welfare in rural Kenya. The baseline sample of this study consists of all respondents who did not yet have a mobile money account in the PM+/CT villages, among the CT spillover group, among the PM+ spillover group, and among the pure control group; a total of 1,132 households. We then randomized 972 of these households to one of two treatment groups. In Treatment 1, participants received information about MPesa and MShwari (a related service offering micro-loans through the mobile phone), and a fixed incentive to sign up for MPesa. The incentive consisted of KES 2100 delivered via MPesa if the participant registered within a three-week period. In Treatment 2, participants received information about MPesa and MShwari, and a declining incentive to register for MPesa. The declining incentive consisted of a transfer of KES 2100 in the first week, which thereafter declined by a third (KSH 700) per week over the three-week period within which participants could register for MPesa. All participants who did not have a personal phone were given the option of buying a new mobile phone from the Busara field officer at a cost of KES 1600, with the cost deducted from the incentive payment. The experimental cash transfers were only delivered after the recipient had contacted Busara and it had been confirmed that the account was opened in the respondent's name.

2.3 Data

2.3.1 Baseline survey

Each of ∼4000 respondents completed a baseline survey that measured mental health, IPV, a number of economic outcomes, and demographic characteristics. The survey was administered on tablet computers using the *SurveyCTO* survey software.

Data integrity was monitored through the following checks:

1. High Frequency Checks: These checks consisted of continuous monitoring of data coming into the server to check for missing observations and inconsistencies in responses. A standardized project-specific STATA .do file was created and run regularly (at least weekly) on incoming data to check for errors. If any errors or discrepancies were

detected, corrective action was taken to resolve these issues. Further, these checks informed the content of refresher training for field officers.

2. Back Checks: These checks consisted of revisiting respondents that had been surveyed previously, and re-asking them questions from the baseline survey whose answers should be time-invariant. Responses in the backcheck survey were matched with baseline responses to monitor the reliability of the data collected. These back-check surveys were also designed to confirm the identity and payment details (phone number for MPesa transfer) of respondents. Back checks were conducted within a week of the original baseline survey, by field officers other than those who collected the baseline data.

3. Random Spot Checks and Field Observations: Field officers were supervised by Project Leads, who regularly observed them while they conducted surveys. Specifically, project leads observed if questions were asked according to protocol, such as probing when answers are unclear. These checks ensure consistency of questioning across field officers. Continuous feedback was relayed to field officers on areas that needed improvement. Additionally, senior project management made random visits to the field.

4. GPS checks: GPS coordinates were recorded for all baseline and backcheck surveys. A different team member checked these coordinates on Google Earth to confirm the existence of a house at the specified location.

5. MPesa confirmation: for respondents receiving cash transfers, we confirmed that the MPesa numbers provided at baseline and backcheck matched, and that the name associated with the mobile money account matched the name of the intended recipient, before the transfer was initiated.

2.3.2 Endline survey

A full endline survey began in August, 2018. Data from this survey was not analyzed before the writing of this pre-analysis plan.

3 Econometric specifications

3.1 *Estimating the impact of cash transfers and mental health programming*

To answer questions 1, 2 and 4, our primary specification is at the village level:

$$y_{vi} = \alpha + \beta_1 CT_{vi} + \beta_2 PMP_{vi} + \beta_3 CT/PMP_{vi} + \beta_4 DFS_{vi} + \beta_5 SPILLCT_{iv} + \beta_6 SPILLPMP + \gamma X_{vi} + \delta y_{viB} + \varepsilon_{vi} \quad (1)$$

where y_{vi} is an outcome for household i in village v, CT_{vi}, PMP_{vi}, and CT/PMP_{vi} are indicator variables for whether household i in village v received either a cash transfer, PM+, or both. $SPILLCT_{vi}$ and $SPILLPMP_{vi}$ are indicator variables for whether the household is a spillover household in either cash transfer or PM+ villages. DFS_{vi} is an indicator for whether the household received an incentive to register for a mobile money account. X_{vi} is a vector of stratification variables, including dummies for being female, having MPesa access, and being above the median at baseline on a psychological wellbeing index, an asset index, an IPV index, and village size. y_{viB} is the outcome variable at baseline; it was not collected for all outcomes, in which case it is omitted. Standard errors are clustered at the village level. The omitted category is households living in pure control villages who did not receive an incentive to register for a mobile money account.

Additionally, we consider the within-village effects (noting these will be biased in the presence of any spillover effects). We restrict to CT and PM+ villages and estimate:

$$y_{vi} = \alpha_v + \beta_1 CT_{vi} + \beta_2 PMP_{vi} + \beta_3 DFS_{vi} + \gamma X_{vi} + \delta y_{viB} + \varepsilon_{vi} \quad (2)$$

where α_v are village level fixed effects and all other variables are as specified above. Standard errors in this last specification are clustered at the household level.

Question 1 is addressed by considering β_1 and β_2 in 1. Question 2 amounts to a test that $\beta_1 + \beta_2 = \beta_3$. Question 3 is answered by evaluating the coefficients on the $SPILLCT$ and $SPILLPMP$ variables.

We estimate Equation 1 and the various robustness checks with the following outcome variables (the details of which are discussed in the appendix):

1. Assets (excluding land and buildings)
2. Revenue from farming, livestock, household businesses and labor
3. Non-durable consumption
4. Index of psychological well-being of recipient (separate analysis for spouse where data is available)
5. Index of intimate partner violence (IPV)

To account for multiple hypothesis testing, we present False Discovery Rate (FDR) adjusted standard errors, correcting across the 6 outcome variables above. We also show the specifi-

cations for components of the above outcomes, for which we do not correct standard errors for multiple hypothesis testing, to indicate which components drive any observed changes in the overall outcome.

3.2 *Exploring spillover mechanisms*

In this section, we outline our approach to answering question 5.

We explore several potential mechanisms by which spillovers might occur. The first is through local prices. At the village level, we estimate:

$$p_{vig} = \alpha + \beta_1 CT_v + \beta_2 PMP_v + \beta_3 CT/PMP_v + \varepsilon_v + \varepsilon_{ig} \tag{3}$$

where p_{vig} is the price for good g reported by household i in village v (thus $\mathbf{p}$ is a vector of prices for various commonly purchased food items). CT_v, PMP_v and CT/PMP_v are indicators for the type of village. Standard errors are clustered at the village level. If treatment leads to inflation, we expect β_1 and β_3 to be positive. Note that we did not collect price data at baseline and therefore do not control for baseline values.

Another channel through which spillovers might occur is if small businesses (e.g., shops selling basic goods) of cash transfer recipients can take business from the businesses of spillover households (e.g., by using cash transfers to offer greater variety or prevent stock-outs). To test for this mechanism, we estimate:

$$g_{vib} = \alpha + \beta_1 CT_{vi} + \beta_2 PMP_{vi} + \beta_3 CT/PMP_{vi} + \beta_4 DFS_{vi} + \beta_5 SPILLCT_{iv} + \beta_6 SPILLPMP + \gamma X_{vi} + \varepsilon_{vib} \tag{4}$$

where g_{vib} is either the 3-month growth, 12-month growth, revenue, or profit of business b reported by household i in village v. Again baseline values are not included because they were not measured. The remaining variables are as defined above. If spillovers occur by cash transfer recipients crowding out other businesses, we expect that β_1 and β_3 will be positive, while β_5 will be negative. Standard errors are clustered at the household level.

We next test whether spillover effects may occur through the sale of livestock by spillover households to treatment households. To explore this channel, we estimate:

$$l_{vi} = \alpha + \beta_1 CT_{vi} + \beta_2 PMP_{vi} + \beta_3 CT/PMP_{vi} + \beta_4 DFS_{vi} + \beta_5 SPILLCT_{iv} + \beta_6 SPILLPMP + \gamma X_{vi} + \varepsilon_{vi} \tag{5}$$

where l_{vi} is how many animals, cows, small ruminants, or birds have been purchased by

the household in total in the preceding 12 months, have been purchased from a company or market, have been purchased from someone in the respondent's village, or have been purchased in another village. We also use the name of the person who sold the livestock to attempt to ascertain if it is indeed the spillover group selling the livestock. The outcome was again not measured at baseline. If spillovers occur as a result of the cash transfers, we expect β_1 and β_3 to be positive, and β_5 to be negative.

With respect to potential spillovers on IPV, we assess the potential for changing community norms and typical actions to create spillovers. We estimate:

$$n_{vi} = \alpha + \beta_1 CT_v + \beta_2 PMP_v + \beta_3 CT/PMP_v + \delta n_{viB} + \varepsilon_{vi} \tag{6}$$

where n_{vi} is a measure of village norms around IPV (described in detail below) reported by household i in village v. Standard errors are clustered at the village level. If village norms change as a function of interventions, we expect β_1, β_2, and/or β_3 to be significant.

In equations 4 and 5 we also apply the robustness checks specified in **??**.

Finally, we will present summary statistics from questions inquiring directly about impacts of cash transfers at the household and village level (see below).

3.3 *Transfer frequency*

To assess whether the frequency of cash transfers impacts outcomes, answering question 6, we restrict the sample to transfer recipients in CT and CT/PM+ villages and estimate:

$$y_{vi} = \alpha_v + \beta_1 LumpCT_{vi} + \beta_2 InstallmentCT_{vi} + \beta_3 PMP_{vi} + \delta y_{viB} + \varepsilon_{vi} \tag{7}$$

where y_{vi} is an outcome for household i in village v, $LumpCT_{vi}$ is an indicator that the recipient received the cash transfer all at once. $InstallmentCT_{vi}$ is an indicator the recipient received the cash transfer in installments. PMP_{vi} is an indicator that the respondent received the PM+ program in addition to cash transfers. α_v are village level fixed effects. The goal of this analysis is to compare β_1 and β_2. Outcomes considered in this specification are the same as in equation 1.

3.4 *The impact of digital financial services*

To answer question 7, the impact of a digital financial service account, we restrict the sample to households who did not have a mobile money account at baseline in the CT/PM+ villages, among the CT spillover group, among the PM+ spillover group, and among the pure control group. We then estimate:

$$z_{vi} = \alpha_v + \beta_1 DFS_{vi} + \delta z_{viB} + \varepsilon_{vi} \tag{8}$$

where z_{vi} is an outcome for household i in village v, DFS_{vi} is an indicator for whether the household received an incentive to register for a mobile money account and α_v are village level fixed effects.

We further estimate a treatment-on-the-treated specification:

$$z_{vi} = \alpha_v + \beta_1 MobileMoney_{vi} + \delta z_{viB} + \varepsilon_{vi} \tag{9}$$

where $MobileMoney_{vi}$ is an indicator that the respondent has a mobile money account at endline, which is instrumented by the randomly determined DFS_{vi} variable.

Outcomes considered in this specification are:

1. Consumption
2. Index combining:
   (a) Time use (for recipient only): total time in income-generating activities and
   (b) Revenue from farming, livestock, household businesses and labor
3. Index of psychological well-being (for recipient only)
4. Index of intimate partner violence (IPV)

We will apply multiple hypothesis testing adjustments to the preceding four outcomes. In addition we will explore several variables that relate to the outcomes above, including:

1. Time use: transition from agricultural to non-agricultural activities
2. Financial behaviors: MPesa account ownership, frequency of transactions, MPesa balance

As there is evidence that access to digital financial services allows people to cope with shocks, we estimate the following model:

$$z_{vi} = \alpha_v + \beta_1 DFS_{vi} \times SHOCK_{vi} + \beta_2 DFS_{vi} + \beta_3 SHOCK_{vi} + \delta z_{viB} + \varepsilon_{vi} \tag{10}$$

where z_{vi} is an outcome for household i in village v, DFS_{vi} is an indicator for whether the household received an incentive to register for a mobile money account, and α_v are village-level fixed effects. $SHOCK_{vi}$ is an indicator that the household answered "yes" to

the question "In the past 12 months, have you had an emergency requiring more cash than you had on hand?"

We also estimate a treatment-on-the-treated specification, instrumenting as described above:

$$z_{vi} = \alpha_v + \beta_1 MobileMoney_{vi} \times SHOCK_{vi} + \beta_2 DFS_{vi} + \beta_3 SHOCK_{vi} + \delta z_{viB} + \varepsilon_{vi} \quad (11)$$

Finally, to understand how incentives matter in driving account registration, we estimate the following model:

$$MobileMoney_{vi} = \alpha_v + \beta_1 Fixed_{vi} + \beta_2 Declining_{vi} + \delta MobileMoney_{viB} + \varepsilon_{vi} \quad (12)$$

where $Fixed_{vi}$ is an indicator the individual received a fixed incentive to register and $Declining_{vi}$ is an indicator the individual received a declining incentive to register. We are interested in comparing β_1 and β_2.

3.5 *Heterogeneous impacts*

In exploratory analysis, we will assess whether the outcomes described above vary by:

1. Gender of recipient (indicator for female)
2. Baseline presence of depression
3. Above median IPV index at baseline
4. Above median baseline asset holdings

3.6 *Secondary analysis*

When estimating each of the equations above we will adjust p-values based on the primary outcomes of interest, reporting False Discovery Rate adjustments. We are further interested in the effects on labor hours and earnings, education, and profits from self-employment. We will report naïve p-values for these outcomes, which we do not consider primary.

4 Indices and Variables

4.1 Outcomes for main effects of cash transfers and mental health support

In equation 1 and the various robustness checks described above, the variables or indices below marked with a $^+$ are primary outcomes of interest. Variables or indices below marked with a # are secondary outcomes. Impacts on variables or indices below marked with a * will also be reported to illuminate the specific cause of the change in the primary outcome.

1. Non-durable consumption$^+$ – monthly consumption per capita
    (a) Food*
        i. Food own production* (value of milk, meat, eggs and additional animal products consumed, value of top three crops produced that was consumed)
        ii. Food bought
            A. Meat, fish & dairy*
            B. Fruit & vegetables*
            C. Cereals*
            D. Other food* (roots, pulses, oils, sugars, prepared food, other food)
    (b) Temptation good expenditure*
        i. Alcohol
        ii. Tobacco
        iii. Gambling
    (c) Personal and household items*
        i. Clothing and shoes
        ii. Personal items such as soap, shampoo, etc.
        iii. Household items such as matches, kerosene, etc.
    (d) Housing repair or improvement*
    (e) Education expenditures*
    (f) Medical expenditure*
    (g) Social expenditure*
        i. Religious expenses or other ceremonies

ii. Weddings
iii. Funerals

(h) Other expense greater than KES 1,000

2. Food security# – weighted standardized index of:

(a) Number of times last month adults cut or skipped meals (negatively coded)*
(b) Number of times last month children cut or skipped meals (negatively coded)*
(c) Number of times last month had to borrow food or rely on help from a friend or relative (negatively coded)*
(d) All household members eat two meals a day (indicator)*
(e) All household members usually eat until content (indicator)*
(f) Number of times last week respondent has eggs, meat or fish*

3. Assets+ – sum of value of:

(a) Productive assets*
i. Irrigation pump
ii. Hose pipe
iii. Ox-Ploughs
iv. Oxen/work bulls
v. Knapsack sprayers
vi. Wheelbarrows
vii. Ox-carts/donkey carts
viii. Hand carts
ix. Other farming tools
x. Fishing equipment (boats, canoes, etc)
xi. Other asset used for agriculture or business

(b) Vehicles*
i. Bicycle
ii. Motorbike

(c) Furniture*
i. Sofas

ii. Chairs
iii. Table
iv. Clock/Watch
v. Beds
vi. Mattresses
vii. Cupboards
viii. Other furniture

(d) Household durables*

i. Cell phone
ii. Sewing machine
iii. Radio, tape- OR CD player
iv. Battery
v. Solar panel
vi. Television or computer
vii. Kerosene stove
viii. Refrigerator

(e) Other

(f) Livestock*

i. Cows (valued at average sample sales price)
ii. Birds (valued at average sample sales price)
iii. Small ruminants (valued at average sample sales price)

(g) Financial assets* - net balance (KES) of savings minus outstanding loans:

i. Savings with an institution (bank, SACCO, micro-finance organization)
ii. Savings with MPesa
iii. Savings in any other place (e.g., with family or friends)
iv. Loans made by friends or family
v. Loans from moneylenders, micro-finance institutions, shops, banks or other sources

4. Revenue^{+} – sum of monthly household revenue from:

(a) Livestock*

i. Cows

A. Value of milk (sold and consumed)

B. Value of meat (sold and consumed)

C. Value of animals sold

D. Value of other products

ii. Small ruminants

A. Value of meat (sold and consumed)

B. Value of animals sold

C. Value of other products

iii. Birds

A. Value of eggs (sold and consumed)

B. Value of meat (sold and consumed)

C. Value of animals sold

(b) Agricultural income (most recent agricultural season)*

i. Value of crops harvested in most recent season

(c) Enterprise income*

i. Sales in prior month (prorated for share of enterprise owned if applicable)

(d) Wage income*

i. Sum of income from outside labor

5. Profits# – sum of monthly household revenue less costs from:

(a) Livestock revenue - Cost of care (e.g. fodder, veterinary care, etc.) - Cost of rented animals

(b) Crop revenue - Costs of seeds, fertilizers/herbicides/pesticides, hired machines, water, labor and other expenses

(c) Enterprise revenue - Costs of electricity, wages, water, transport, purchase of inputs, other costs (prorated for share of enterprise owned if applicable)

6. Labor# – hours spent per week per capita on income generating activities, including:

(a) Working in agriculture for this household*

(b) Tending animals for this household*

(c) Working in a non-farm or livestock business owned by this household*

(d) Working for pay for someone outside the household (in agriculture, livestock, housework, casual labor, salaried job or other paid work)*

7. Education index$^{\#}$ – weighted standardized index of:

   (a) Proportion of children (<19) in school*

      i. Average days of school missed per child (<19)* - *negatively coded*

      ii. Average spending on school expenses per child (<19)*

      iii. Average time studying or in school per child (<19)*

8. Psychological well-being^{+}– weighted standardized index of (a)-(d):

   (a) GHQ-12* with standard scoring

   (b) Cohen Stress (PSS)*

   (c) WVS (happiness)* (1-4 scale)

   (d) WVS (life satisfaction)* (1-10 scale)

   (e) Custom Worries scale*

   (f) WHODAS

9. Intimate Partner Violence^{+} – weighted standardized index of physical and sexual violence variables. Variables marked with ‡ will be used in the comparison of actual violence with attitudes towards and norms about violence.

   (a) Physical violence

      i. How many times per month did your husband beat you, slap you or act violently against you?‡

      ii. How many times per month did your husband push you, shake you, or throw something at you?

      iii. How many times per month did your husband slap you?

      iv. How many times per month did your husband twist your arm or pull your hair?

      v. How many times per month did your husband punch you with his fist or with something that could hurt you?

      vi. How many times per month did your husband kick you, drag you or beat you up?

vii. How many times per month did your husband try to choke you or burn you on purpose?

viii. How many times per month did your husband threaten to attack you with a knife, gun, or any other weapon?

ix. How many times per month did your husband beat any of the children under the age of 12 living in this household or discipline them using physical measures?‡

(b) Sexual violence

i. How many times per month did your husband physically force you to have sexual intercourse with him even when you did not want to?‡

ii. How many times per month did your husband force you to perform any sexual acts you did not want to?

(c) Emotional violence

i. How many times per month did your husband not trust you with any money?

ii. How many times per month did your husband expect you to ask him for permission before leaving the house?

iii. How many times per month did your husband ever insult you or make you feel bad about yourself?‡

(d) Attitudes: Male focused attitudes

i. The important decisions in the family should be made only by the men of the family

ii. The wife has the right to express her opinion even when she disagrees with what her husband is saying

iii. It is the husband's responsibility to provide for the wife and the family

iv. A real man produces a male child

(e) Attitudes about justifiability of violence

i. A wife should tolerate being beaten by her husband

ii. It is acceptable for a husband to not trust his wife with any money

iii. It is acceptable for a husband to expect his wife to ask him for permission before leaving the house

iv. Emotional violence attitude: It is acceptable for a husband to insult his wife or make her feel bad about herself‡

v. Physical violence attitude: It is acceptable for a husband to beat his wife, slap her, or act violently against her[‡]

vi. Sexual violence attitude: It is acceptable for a husband to physically force his wife to have sexual intercourse with her even when she does not want to[‡]

vii. Child violence attitude: It is acceptable for a father to beat his children under the age of 12 or discipline them using physical measures.[‡]

(f) Satisfaction with relationship – weighted standardized index of:

i. Are you satisfied with your relationship?

ii. How often do you think your relationship is good compared to most other relationships in your village? How often do you think that your relationship met your original expectations?

iii. How often are there any problems in your relationship?

iv. How often do you wish you hadn't gotten in this relationship?

v. How often do you feel that your husband is unable to provide sufficiently for you and your family?

(g) Violence against children (indicator)

(h) Intimate partner violence: testing for reporting and demand effects

i. List randomization: physical and sexual violence

ii. Envelope randomization: physical and sexual violence

iii. Anonymous reporting by pointing at faces (physical and sexual violence against spouse, physical violence against children)

A. In the past 6 months, has your husband ever beaten you, slapped you, or acted violently against you? Please point to the happy face if this DID NOT happen to you. Please point to the sad face if this DID happen to you.

B. In the past 6 months, did your spouse ever beat any of the children under the age of 12 living in this household or disciplined them using physical measures? Please point to the happy face if this DID NOT happen to any children under the age of 12 living in the household. Please point to the sad face if this DID happen to any of the children under the age of 12 living in the household.

C. In the past 6 months, has your husband ever forced you to have sexual intercourse with him even when you did not want to? Please point to the

happy face if this DID NOT happen to you. Please point to the sad face if this DID happen to you.

iv. Demand treatments: difference in answers to physical and sexual violence questions before vs. after demand treatment, with individual-level fixed effects.

(i) Bargaining power: indifference point between receiving KES 1000 oneself, or one's spouse receiving KES 800–2000.

4.2 Exploring Spillover Mechanisms

1. Prices: local (in village) price for most commonly purchased food items
2. Business revenue:
   (a) Indicator for growth: In the last 3 months would you say this business has grown, shrunk or stayed the same?
   (b) Indicator for growth: In the last 12 months would you say this business has grown, shrunk or stayed the same?
   (c) Enterprise revenues and profits (as defined above)
3. Livestock purchases:
   (a) Value of animals bought
   (b) Value of animals bought from markets
   (c) Value of animals bought in this village
   (d) Value of animals bought in other villages
   (e) Value share of transactions initiated by buyer
4. IPV norms
   (a) Prescriptive norms: Attitudes about justifiability of violence
      i. A typical woman in this village thinks that a wife should tolerate being beaten by her husband.
      ii. A typical woman in this village thinks think that it is acceptable for a husband to not trust his wife with any money.
      iii. A typical woman in this village thinks that it is acceptable for a husband to expect his wife to ask him for permission before leaving the house.

iv. Emotional violence prescriptive norms: A typical woman in this village thinks that it is acceptable for a husband to insult his wife or make her feel bad about herself.‡

v. Physical violence prescriptive norms: A typical woman in this village finds it acceptable for a husband to beat his wife, slap her, or act violently against her.‡

vi. Sexual violence prescriptive norms: A typical woman in this village thinks that it is acceptable for a husband to physically force his wife to have sexual intercourse with her even when she does not want to.‡

vii. Child violence prescriptive norms: A typical woman in this village thinks that it is acceptable for a father to beat his children under the age of 12 or discipline them using physical measures.‡

(b) Descriptive norms: Male focused attitudes

i. A typical woman in this village thinks that the important decisions in the family should be made only by the men of the family

ii. A typical woman in this village thinks that the wife has the right to express her opinion even when she disagrees with what her husband is saying

iii. A typical woman in this village thinks that it is the husband's responsibility to provide for the wife and the family

iv. A typical woman in this village thinks that a real man produces a male child.

(c) Descriptive norms: Physical violence

i. How many times per month did a typical husband in your village beat his wife, slap her, or act violently against her?‡

ii. How many times per month did a typical husband in your village beat any of the children under the age of 12 living in the household or discipline them using physical measures?‡

(d) Descriptive norms: Sexual violence

i. How many times per month did a typical husband in your village force his wife to have sexual intercourse with him even when she did not want to?‡

(e) Descriptive norms: Emotional violence

i. How many times per month did a typical husband in your village insult his wife or make her feel bad about herself?‡

4.3 Cash transfer summary statistics

1. For transfer recipients:
   (a) The cash transfer caused new frustrations and arguments between me and my husband/wife
   (b) My husband/wife and I separated or left the household after the cash transfer
   (c) The cash transfer caused jealousy between me and my husband/wife
   (d) I gave my husband/wife part of the money so that he/she could stop pestering me about it
   (e) We both made decisions on how to spend the money but my husband had the final say
   (f) I would always notify my husband/wife whenever I received the money
   (g) The cash transfer money was mainly set aside for personal and not household benefits
   (h) The cash transfer was used to pay dowry
   (i) Even though I received the cash transfer, I felt like my husband/wife had full control of it
   (j) I wish I received the cash transfer instead of my husband/wife because I believe I would have managed it better
2. Asked of all respondents in cash transfer villages:
   (a) Are you aware of others in your village getting assistance from NGOs in the past 12 months?
      i. What type of assistance?
      ii. From what organization?
   (b) The cash transfers in my community caused tension between my household and my community
   (c) There was some tension or jealousy between the households that received the cash transfer and those that did not receive it

4.4 Digital Financial Service Outcomes

1. Primary Consumption – as above

2. Financial behaviors

    (a) Personal MPesa account

    (b) Account usage (sending and receiving, for business)

    (c) Account balance

    (d) Total savings

    (e) Ability to obtain cash in emergency

    (f) Personal bank account

    (g) Household bank account

3. Time use (for recipient only)

    (a) In the past 7 day, how many hours has {hhmember} spent working in agriculture for this household

    (b) In the past 7 days, how many hours has {hhmember} spent tending animals for this household

    (c) In the past 7 days, how many hours has {hhmember} spent working in a non-farm or livestock business owned by this household

    (d) In the past 7 days, how many hours has {hhmember} spent working for pay for someone outside the household (in agriculture, livestock, housework, casual labor, salaried job or other paid work)

    (e) How much does {hhmember} earn in an average month from working outside the household for pay?

4. Revenue from farming, livestock, household businesses and labor – as above

5. Index of psychological well-being (for recipient only) – as above

6. Index of intimate partner violence (IPV) – as above