Can transfers and complementary nutrition programming reduce intimate partner violence four years post-program? Experimental evidence from Bangladesh

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Online Appendix

Online Appendix A: Implementation of TMRI's cluster randomized control trial design

TMRI's cluster randomized control trial was implemented in identical fashion in the North and South. In each region, five sub-districts (*upazilas*) were selected from a list of *upazilas* where, according to the 2010 Bangladesh Poverty Map prepared by the Bangladesh Bureau of Statistics, the proportion of households living below the lower poverty line in Bangladesh was 25 percent or more. All villages within these five *upazilas* were listed. Villages with fewer than 125 households or villages that were considered peri-urban were dropped. In each region, simple random sampling was used to assign 50 villages from this list to each of the four treatment groups and to the control group, and to assign 25 villages as reserve. In the 250 selected villages in each region, a village census was carried out, which collected information on household demographics, poverty indicators, and whether households were participating in social safety net and other targeted interventions. In each selected village, a list was constructed of households that met the eligibility criteria for the study: that is, the household was considered poor (i.e., estimated to have consumption below the lower poverty line in Bangladesh[1]); had a child aged 0-24 months in March 2012; and was not receiving benefits from any other social safety net interventions. From each village, 10 households meeting these three conditions were randomly selected for inclusion in TMRI.

[1] The lower poverty line identifies the extreme poor households whose total household expenditures are below the estimated cost of a basic food basket providing 2,122 kilocalories per person per day.

Online Appendix B: Intimate partner violence questions and categorizations

Emotional violence

1. Insulted you or made you feel bad about yourself?
2. Belittled or humiliated you in front of other people?
3. Done things to scare or intimidate you on purpose (e.g. by the way he looked at you, by yelling and smashing things)?
4. Threatened to hurt you or someone you care about?

Physical violence

1. Slapped you or thrown something at you that could hurt you?
2. Pushed you or shoved you or pulled your hair?
3. Hit you with his fist or with something else that could hurt you?
4. Kicked you, dragged you or beat you up?
5. Choked or burnt you on purpose?
6. Threatened to use or actually used a gun, knife or other weapon against you

Online Appendix C: Construction of summary indices for pathway channels

We have 29 variables that contribute to our understanding of the channels and thus the pathways that led to a sustainable reduction in IPV four years after the TMRI ended; these are listed in Online Appendix Table 1. We aggregate these variables into channels through the construction of standardized summary indices following Kling, Liebman, and Katz (2007) and Banerjee et al. (2015). We also construct these summary indices using Inverse Covariance Weighting (ICW) (Anderson 2008) as a robustness check.

Following Kling, Liebman, and Katz (2007), the construction of summary indices consists of the following steps:

1. All outcomes are recoded so that higher values represent "better" outcomes.
2. Missing values for all outcomes are then imputed at the random assignment group mean (for respondents with at least one non-missing outcome).
3. We then convert all outcomes into standardized z-scores (i.e. effect sizes) by subtracting the control group mean and dividing by the control group standard deviation (SD). This is straightforward for binary and continuous outcomes. Categorical outcomes, however, need to be transformed first into discrete variables. Following Heath, Hidrobo, and Roy (2020) this is done by transforming categorical outcomes with n response options into n-1 binary variables and then standardizing, summing up and averaging out the result into one outcome index.[2]

[2] As an alternative, Item Response Theory (IRT) models can also be used to create a summary outcome measure based on a given set of sub-questions (items). To test if IRT models produce similar results to our approach, we estimated IRT indices by fitting IRT models to the underlying items and predicted the latent variable as the summary index. We then standardized each IRT index analogous to the approach described above by subtracting the control group mean and dividing by the control group standard deviation. The indices of both approaches were very

For instance, a question with the three response options "never/sometimes/most of the time" is transformed into two binary variables, one with "1 = sometimes/most of the time" and another with "1 = most of the time". Note that after this transformation, the more values of 1 the respondent gives, the greater her respective outcome. We prefer this transformation to treating the categorical variables as continuous, which assumes a constant marginal effect of going from never to sometimes and from sometimes to most of the time. If the marginal effect of each change is indeed not constant, treating the categorical variable as continuous would throw away important information by weighting each incremental change equally. These n-1 binary variables are then transformed into standardized z-scores by subtracting the control group mean and dividing by the control group SD. We then take the average of all standardized z-scores and standardize the results again. The same approach is used to construct single outcome measures out of multiple survey questions of the same module.

4. The summary index is then simply the equally weighted average of z-scores. This average is then again standardized to the control group using the control group mean and standard deviation. Since each summary index therefore has a mean of 0 and standard deviation of 1 for the control group, the treatment effect estimators can be interpreted as the effect size relative to the control group, with higher scores showing more beneficial outcomes.

We also construct summary indices using Inverse Covariance Weighting (ICW) as a robustness check (Anderson 2008). Instead of using equal weights, this approach weighs each index

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similar numerically, with an average correlation of ~0.8. Since we did not observe substantial differences between both approaches – and to be consistent with the remaining aggregation steps – we decided to use the standardization method as described above and not the IRT-constructed indices.

component by the sum of its row entries in the inverted variance-covariance matrix of the outcome variables in the respective outcome family. These weights maximize the amount of information captured in the covariance matrix by assigning higher weights to those index components with lower covariance than other components, i.e. to those with “new” information. Conversely, it assigns lower weights to index components with high covariances with other components. We standardize this weighted average again using the control group mean and standard deviation.

Online Appendix D: Robustness of main impacts to alternative measures of IPV

Online Appendix Tables 8 and 9 explore whether results at 4yPP are robust to alternative ways of defining violence. We first look at the individual indicators that make up emotional and physical violence (Online Appendix Table 8). Of the 4 indicators that make up emotional violence, both Cash and Cash+BCC in the North decrease the likelihood that a husband does something to scare or intimidate his wife, but the magnitude of impact is significantly larger for the Cash+BCC arm compared to the Cash Arm (-0.11 versus -0.05). For physical violence, the Cash+BCC arm leads to significant reductions in 4 out of the 6 individual indicators while the Cash arm leads to a significant reduction in only 1 out of the 6 indicators. Differences in impact between the Cash and the Cash+BCC arm are significant for 3 out of the 6 physical violence indicators. In the South, Food leads to no significant impacts on any individual acts of violence and Food+BCC leads to only one marginally significant impact.

Online Appendix Table 9 examines whether there are impacts on the intensive margin. Two indicators are created: the additive frequency of violence, which sums up codes for the frequency (once=1, a few times=2, many=3) reported for each individual act of physical or emotional violence, respectively; and the maximum violence which considers the maximum frequency reported over all acts of physical or emotional violence, respectively. For emotional violence, there are significant impacts at 4yPP of the Cash+BCC arm on the additive frequency and maximum frequency scale of 31 and 21 percent respectively compared to the control group mean. For physical violence at 4yPP, there are also significant impacts of the Cash+BCC on both the additive and maximum frequency scale that range from 55 to 57 percent compared to the control group mean. There are no impacts on any frequency measure of the Cash, Food, or

Food+BCC. These results are consistent with our findings reported in Table 3 that highly significant results are consistently found only in the Cash+BCC arm in the North.

Online Appendix E: Testing for Social Desirability Bias

We conduct robustness analyses of the main impact estimates to test for social desirability bias, the tendency to report an answer that survey respondents deem to be viewed favorably by others. Social desirability bias could affect our results if IPV was differentially underreported across our intervention arms. Underreporting IPV per se, however, does not necessarily bias the impact estimates. For instance, if IPV was equally underreported in all treatment and control groups, the overall prevalence of IPV would be underreported but the comparison among the groups would not be affected and would still produce valid impact estimates. In particular, for our results to be driven by social desirability bias, it would have to be the case that there was differential bias between the Transfers+BCC arms (specifically the Cash+BCC arm) and other arms, that is, the combination of Transfers+BCC caused women to perceive reporting physical violence as less socially desirable but Transfers only did not. We test this empirically.

To measure social desirability at 4yPP, we followed Menon et al. (2016) and administered a subset of five binary questions adapted from the short form of the Marlowe-Crowne social desirability scale (Reynolds 1982). The five yes/no questions are:

(1) Do you occasionally give up doing something because you don't think you have the ability?

(2) Do you occasionally feel like not listening to people even if you know they are right?

(3) Do you sometimes get irritated/annoyed by people who ask you to do something for them?

(4) Are you always courteous, even to people who are disagreeable/not pleasant?

(5) When you make a mistake, are you always willing to admit it?

We construct a social desirability score (SDS) by adding up all the socially desirable responses of the five questions. The SDS therefore ranges from 0-5, whereby an SDS of 0-2 is considered as a low score, 3 as medium score, 4 as high, and 5 as very high (Ibid.). In our data, the mean SDS is 2.87 (SD=1.13) with a Chronbach's alpha of 0.54.

We compare the SDS across treatment arms separately in the North and the South (Online Appendix Table 13). In the South, the results show no significant difference between the Food and control arm or Food+BCC and the control arm. In the North, however, the score in the Cash+BCC arm is 6.7% higher than in the control group (p = 0.08). This suggests that women in the North may indeed have underreported IPV in the BCC arm but not in others. Given that this mirrors our finding that IPV impact estimates are strongest in the Cash+BCC arm in the North, this suggests the possibility that these estimates could have been driven by differentially low reporting and not by differentially low prevalence of IPV. To test this, we followed Menon et al. (2016) and estimated our regression models with each of the main IPV outcomes as the dependent variables and interactions between the treatment arms and the SDS as independent variables. We estimated these interaction models separately by region (Online Appendix Table 14).

At 4yPP in the North, there is no significant interaction between any of the groups and the SDS. At 6mPP in the North, we do find a few significant interactions for both emotional and physical violence, but only in the Cash group and not in the Cash+BCC group. In the South, we find no significant interactions between the treatment arms and SDS at 6mPP but we see a marginally significant result at 4yPP (Food * SDS). The sign of the coefficient on the interaction with SDS is however positive. Given this pattern of findings, and particularly since we don't see

significant interaction effects in the North at 4yPP where we show significant reductions in IPV, we believe that social desirability is unlikely to drive our core results.

Online Appendix tables

Online Appendix Table 1: Outcome variables used to construct summary indices

#	Outcome variable	Details
1	Woman works for cash, food, or asset accumulation	Probability (0/1) that female respondent is doing work that brings in cash, additional food, or allows to accumulate HH assets
2	Monthly labor income index	Index as the average of two indicators: having non-zero labor income; and having non-zero labor income above the median of the non-zero control group. Index standardized to the control group.
3	Control over money needed to buy: food, clothes, medicine, toiletries/cosmetics	Probability (0/1) that female respondent controls money to buy food, clothes, medicine, and toiletries/cosmetics (requires *yes* responses to all four items).
4	Value of solely owned assets (index)	Index as the average of two indicators: owning non-zero asset values; and owning non-zero asset values above the median of the non-zero control group asset value. Index standardized to the control group.
5	Ownership of savings	Probability (0/1) that the female respondent owns any savings of any value.
6	Locus of control index	Index created using factor analysis and based on 15 categorical questions of Levenson's agency scale (Levenson 1981). Index standardized to the control group.
7	Self-ranking on 9-step ladder of having rights (index)	Self-ranking of having rights, ranging from "completely without rights" (=1) to "a lot of power" (=9). Responses were recoded to a standardized index using the approach described in Online Appendix C.
8	Self-ranking on 9-step ladder of ability to change life (index)	Self-ranking of ability to change own life, ranging from "totally unable to change my life" (=1) to "full control over my own life" (=9). Responses were recoded to a standardized index using the approach described in Online Appendix C.
9	Perceive success/failure as own responsibility vs. destiny	1 = female respondent perceives success/failure in life as own responsibility; 0 = as destiny

10	Gender norms index	Based on 8 questions asking the female respondent to what extent she agrees/disagrees with normative statements around gender. Responses were recoded to a standardized index using the approach described in Online Appendix C.
11	Attitudes about IPV	Based on 5 questions asking the female respondent if she thinks a husband is justified in hitting or beating his wife in any of the 5 situations described. Recoded to binary indicator with 1 = hitting/beating never justified.
12	Exposure to places outside of home (index)	Index based on 7 questions asking the female respondent how often she visits or goes to certain places (bazaar, doctor, community meetings, friends, family, etc.). Responses were recoded to a standardized index using the approach described in Online Appendix C.
13	Ever using radio or TV	1 = female respondent is using radio or TV (ranging from irregularly to every day); 0 = hardly/never.
14	Ownership of mobile phone	1 = female respondent owns a mobile phone; 0 = doesn't.
15	Level of social capital: Someone to help in time of need	Probability (0/1) that the female respondent has someone to help in time of need. Must answer yes to all four criteria: hosts for multiple nights in necessary, helps financially/lends money, helps when insufficient food at home, talks to you if you have problems.
16	Level of social capital: Meet with women to discuss issues	Probability (0/1) that the female respondent meets with women to discuss issues related to the community, education, health, finances, agriculture/livestock, issues specific to women, issues related to nutrition (all yes).
17	How often do you see family or friends (index)	Index based on 2 questions asking the female respondent how often she visits relatives (outside of her household) or friends. Responses were recoded to a standardized index using the approach described in Online Appendix C.
18	Participation in savings group	1 = female respondent has participated in a savings group in the last 12 months; 0 = has not.
19	Women’s level of perceived social cohesion (index)	Index based on 4 questions asking the female respondent whether people in her community: look out for and help their

		neighbors; can be trusted; know who she is; care about her. Responses were recoded to a standardized index using the approach described in Online Appendix C.
20	Women's perception that community would intervene in cases of IPV (index)	Index based on 2 questions asking the female respondent how likely it is that someone in her community would intervene if s/he learned that a man was (a) verbally or (b) physically abusing his wife at home. Responses were recoded to a standardized index using the approach described in Online Appendix C.
21	Village leader's perception that community disagrees with justifying IPV (index)	Index based on 1 question asking the village leader if village members would agree that a husband is justified in hitting/beating his wife in some situations. Responses were recoded to a standardized index using the approach described in Online Appendix C.
22	Village leader's perception that community would intervene in cases of IPV (index)	Index based on 1 question asking the village leader how likely it is that village members would intervene if s/he learned that a man was physically abusing his wife at home. Responses were recoded to a standardized index using the approach described in Online Appendix C.
23	Male's gender norms index	Based on 8 questions asking the male respondent to what extent he agrees/disagrees with normative statements around gender. Responses were recoded to a standardized index using the approach described in Online Appendix C.
24	Male's attitudes about IPV	Based on 5 questions asking the male respondent if he thinks a husband is justified in hitting or beating his wife in any of the 5 situations described. Recoded to binary indicator with 1 = hitting/beating never justified.
25	Total monthly household consumption (per capita)	Total monthly household expenditure per capita in 2012/13 Bangladeshi Taka (BDT), i.e. deflated to TMRI's baseline year.
26	Household Food Insecurity (HFIAS score)	Household Food Insecurity Access Scale (HFIAS) score, ranging from 0-27 (following USAID/FANTA guidelines). Higher values denote more food insecurity.

27	Men's stress (PSS score)	Perceived Stress Score (PSS), ranging from 0-40 (following Cohen, Kamarck, and Mermelstein 1983). Higher values denote more perceived stress.
28	Men's depression (PHQ-9 score)	Depression Severity Score (PHQ-9), ranging from 0-27. Higher values denote higher levels of depression.
29	Men's locus of control (index)	Index created using factor analysis and based on 15 categorical questions of Levenson's agency scale (Levenson 1981). Index standardized to the control group.

Online Appendix Table 2: Attrition from baseline (N = 3,000) to sample with husband data at 4yPP (N = 1,989)

	Full sample	North	South
Transfers	0.00	-0.01	0.02
	(0.03)	(0.04)	(0.04)
Transfers+BCC	-0.00	0.02	-0.03
	(0.03)	(0.03)	(0.04)
Constant/Control group	0.35	0.32	0.35
	(0.02)***	(0.02)***	(0.03)***
R^2	0.00	0.00	0.00
N	3,000	1,500	1,500
P-value: Transfers = Transfers+BCC	0.80	0.29	0.22

OLS coefficients reported. Full sample model includes regional fixed effects (not shown). Standard errors clustered at the village level. * $p<0.1$ ** $p<0.05$; *** $p<0.01$

Online Appendix Table 3: Baseline characteristics of sample with husband data by intervention arm

Panel A: North

	N	Means			P-value of diff.		
		Cash	Cash+BCC	Control	Cash - Control	Cash+BCC -Control	Cash - Cash+BCC
Woman's age	1,012	27.14	27.58	27.39	0.59	0.72	0.39
Woman's years of formal schooling	1,012	2.81	2.75	2.92	0.70	0.57	0.83
Woman can read and write	1,012	0.49	0.49	0.47	0.74	0.76	0.99
Woman is the spouse of HH head	1,012	0.86	0.86	0.86	1.00	0.82	0.83
Woman's number of children aged 0-5 years	1,012	1.35	1.33	1.39	0.52	0.32	0.69
Woman's number of children aged 6-15 years	1,012	0.87	0.98	0.86	0.88	0.15	0.17
Doing work that brings in cash, add'l food, or allows to accumulate HH assets	1,012	0.05	0.13	0.15	0.34	0.86	0.42
Woman's monthly labor income	1,012	0.04	0.04	0.02	0.84	0.82	0.96
Woman currently owns any savings	1,012	0.11	-0.03	0.00	0.22	0.70	0.13
Controls money needed to buy food, clothes, medicine, and toiletries	1,012	-0.09	-0.04	-0.08	0.94	0.69	0.64
Household size	1,012	5.00	5.10	4.98	0.88	0.36	0.46
Household's total monthly consumption expenditure per capita	1,012	-0.08	-0.09	-0.11	0.44	0.73	0.90
p-value from joint F-test					0.81	0.53	0.87

Panel B: South

	N	Means			P-value of diff.		
		Food	Food+BCC	Control	Food - Control	Food+BCC -Control	Food - Food+BCC
Woman's age	977	27.69	26.57	27.22	0.47	0.28	0.08
Woman's years of formal schooling	977	3.43	3.81	4.06	0.04	0.48	0.23
Woman can read and write	977	0.59	0.64	0.67	0.04	0.58	0.20
Woman is the spouse of HH head	977	0.80	0.79	0.81	0.75	0.60	0.81
Woman's number of children aged 0-5 years	977	1.40	1.34	1.35	0.27	0.74	0.15
Woman's number of children aged 6-15 years	977	1.07	0.82	1.04	0.74	0.05	0.03
Doing work that brings in cash, add'l food, or allows to accumulate HH assets	977	-0.07	-0.19	-0.16	0.43	0.79	0.28
Woman's monthly labor income	977	-0.09	-0.10	-0.00	0.32	0.30	0.91
Woman currently owns any savings	977	0.10	-0.01	-0.00	0.27	0.94	0.26
Controls money needed to buy food, clothes, medicine, and toiletries	977	0.03	-0.00	-0.04	0.43	0.71	0.71
Household size	977	5.43	5.26	5.63	0.17	0.02	0.26
Household's total monthly consumption expenditure per capita	977	0.04	-0.02	0.11	0.49	0.16	0.20
p-value from joint F-test					0.34	0.01	0.20

P-values are reported from Wald tests on the equality of means of control and each treatment for each variable. Standard errors are clustered at the village level.
Variables with missing values imputed at the treatment group mean: Doing work […], Controls money […], Household's consumption expenditure.
Standardized variables: Doing work […], Woman's monthly labor income, Woman currently owns any savings, Controls money […], Household's consumption expenditure.

Online Appendix Table 4: Attrition from baseline (N = 3,000) to alternative 4yPP sample (N = 2,642)

	Full sample	North	South
Transfers	0.00	-0.01	0.02
	(0.02)	(0.02)	(0.02)
Transfers+BCC	0.01	0.03	-0.02
	(0.02)	(0.03)	(0.02)
Constant/Control group	0.10	0.13	0.10
	(0.01)***	(0.02)***	(0.02)***
R^2	0.00	0.00	0.00
N	3,000	1,500	1,500
P-value: Transfers = Transfers+BCC	0.77	0.11	0.14

OLS coefficients reported. Full sample model includes regional fixed effects (not shown). Standard errors clustered at the village level. * $p<0.1$ ** $p<0.05$; *** $p<0.01$

Online Appendix Table 5: Baseline characteristics of alternative 4yPP sample by intervention arm

Panel A: North

	N	Means			P-value of diff.		
		Cash	Cash+BCC	Control	Cash - Control	Cash+BCC -Control	Cash - Cash+BCC
Woman's age	1,292	27.99	28.39	28.31	0.57	0.88	0.44
Woman's years of formal schooling	1,292	2.72	2.63	2.81	0.74	0.48	0.71
Woman can read and write	1,292	0.47	0.46	0.46	0.87	0.97	0.86
Woman is the spouse of HH head	1,292	0.80	0.80	0.80	0.96	0.99	0.96
Woman's number of children aged 0-5 years	1,292	1.27	1.28	1.30	0.68	0.84	0.86
Woman's number of children aged 6-15 years	1,292	0.83	0.92	0.81	0.84	0.17	0.22
Doing work that brings in cash, add'l food, or allows to accumulate HH assets	1,292	0.04	0.16	0.13	0.34	0.79	0.20
Woman's monthly labor income	1,292	0.09	0.05	0.03	0.51	0.88	0.59
Woman currently owns any savings	1,292	0.05	-0.06	0.01	0.61	0.42	0.17
Controls money needed to buy food, clothes, medicine, and toiletries	1,292	-0.07	-0.04	-0.06	0.96	0.78	0.74
Household size	1,292	5.04	5.06	5.01	0.80	0.63	0.83
Household's total monthly consumption expenditure per capita	1,292	-0.09	-0.09	-0.11	0.47	0.67	0.94
p-value from joint F-test					0.84	0.81	0.81

Panel B: South

	N	Means			P-value of diff.		
		Food	Food+BCC	Control	Food - Control	Food+BCC -Control	Food - Food+BCC
Woman's age	1,350	28.30	27.55	27.86	0.45	0.60	0.21
Woman's years of formal schooling	1,350	3.42	3.61	3.96	0.04	0.23	0.47
Woman can read and write	1,350	0.58	0.62	0.66	0.02	0.33	0.28
Woman is the spouse of HH head	1,350	0.70	0.69	0.72	0.65	0.49	0.79
Woman's number of children aged 0-5 years	1,350	1.32	1.29	1.31	0.73	0.73	0.50
Woman's number of children aged 6-15 years	1,350	1.05	0.84	1.01	0.71	0.07	0.03
Doing work that brings in cash, add'l food, or allows to accumulate HH assets	1,350	-0.02	-0.13	-0.13	0.28	0.97	0.24
Woman's monthly labor income	1,350	-0.08	-0.04	-0.03	0.50	0.93	0.59
Woman currently owns any savings	1,350	0.06	-0.02	-0.01	0.39	0.92	0.32
Controls money needed to buy food, clothes, medicine, and toiletries	1,350	0.11	0.10	0.06	0.50	0.67	0.81
Household size	1,350	5.52	5.32	5.63	0.45	0.04	0.17
Household's total monthly consumption expenditure per capita	1,350	0.06	0.00	0.11	0.50	0.13	0.19
p-value from joint F-test					0.63	0.01	0.14

P-values are reported from Wald tests on the equality of means of control and each treatment for each variable. Standard errors are clustered at the village level.
Variables with missing values imputed at the treatment group mean: Doing work […], Controls money […], Household's consumption expenditure.
Standardized variables: Doing work […], Woman's monthly labor income, Woman currently owns any savings, Controls money […], Household's consumption expenditure.

Online Appendix Table 6: 4-year post-program impact of treatment on prevalence of IPV in the past 12 months, North and South (alternative 4yPP sample)

	North				South				North versus South	
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value of Cash=Food	P-value of Cash+BCC= Food+BCC
Emotional violence (last12m) at 4yPP	0.41	0.04	-0.06	0.01**	0.39	0.01	0.01	1.00	0.60	0.17
		(0.04)	(0.04)			(0.04)	(0.04)			
Physical violence (last12m) at 4yPP	0.24	-0.02	-0.13***	0.00***	0.16	-0.02	-0.01	0.51	0.91	0.00***
		(0.03)	(0.03)			(0.02)	(0.02)			

Marginal effects of probit models reported. Control variables of both models (North and South) include all baseline characteristics of the woman and her household shown in Tables 2a and 2b.
Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01. N=1292 (North); N=1350 (South)

Online Appendix Table 7: 4-year post-program impact of treatment on prevalence of IPV in the past 12 months, North and South (linear probability model)

	North				South				North versus South	
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value of Cash=Food	P-value of Cash+BCC= Food+BCC
Emotional violence (last6m) at 6mPP	0.61	-0.02	0.02	0.42	0.63	0.03	-0.05	0.12	0.52	0.33
		(0.05)	(0.05)			(0.06)	(0.06)			
Emotional violence (last12m) at 4yPP	0.44	0.02	-0.07*	0.04**	0.40	0.01	0.00	0.82	0.94	0.21
		(0.04)	(0.04)			(0.04)	(0.04)			
Physical violence (last6m) at 6mPP	0.30	-0.01	-0.09***	0.03**	0.22	0.01	-0.05	0.08*	0.67	0.36
		(0.03)	(0.03)			(0.04)	(0.03)			
Physical violence (last12m) at 4yPP	0.26	-0.04	-0.13***	0.00***	0.17	-0.02	-0.01	0.49	0.71	0.00***
		(0.03)	(0.03)			(0.02)	(0.02)			

OLS coefficients reported with standard errors in parentheses (clustered at the village level). Control variables include all baseline characteristics of the woman and her household shown in Tables 2a and 2b.
Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 8: 4-year post-program impact of treatment on individual IPV indicators (past 12 months), North and South

	North				South				North versus South	
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value of Cash=Food	P-value of Cash+BCC= Food+BCC
Emotional violence										
Insulted you or made you feel bad about yourself	0.39	0.02	-0.06	0.04**	0.38	0.00	-0.01	0.72	0.69	0.39
		(0.04)	(0.04)			(0.04)	(0.04)			
Belittled or humiliated you in front of other people	0.25	-0.02	-0.06	0.37	0.18	-0.02	0.02	0.27	0.98	0.16
		(0.04)	(0.04)			(0.03)	(0.03)			
Done things to scare or intimidate you on purpose	0.23	-0.05*	-0.11***	0.08*	0.14	0.02	0.00	0.52	0.08*	0.01***
		(0.03)	(0.03)			(0.03)	(0.03)			
Threatened to hurt you or someone you care about	0.01	-0.00	-0.00	0.87	0.02	-0.00	-0.02*	0.06*	0.62	0.37
		(0.01)	(0.01)			(0.01)	(0.01)			
Physical violence										
Slapped you or thrown something at you that could hurt you	0.25	-0.06*	-0.13***	0.02**	0.15	-0.02	-0.01	0.48	0.52	0.00***
		(0.03)	(0.03)			(0.02)	(0.02)			
Pushed you or shoved you or pulled your hair	0.11	-0.03	-0.07***	0.07*	0.07	-0.01	-0.00	0.65	0.61	0.02**
		(0.02)	(0.02)			(0.02)	(0.02)			
Hit you with his fist or with something else that could hurt you	0.12	-0.03	-0.09***	0.03**	0.05	-0.01	0.01	0.32	0.48	0.00***
		(0.02)	(0.02)			(0.02)	(0.02)			
Kicked you, dragged you or beat you up	0.08	-0.02	-0.04**	0.19	0.05	-0.02	0.00	0.19	0.94	0.06*
		(0.02)	(0.02)			(0.01)	(0.01)			
Choked or burnt you on purpose	0.01	-0.00	-0.01	0.29	0.01	-0.00	-0.00	0.90	0.69	0.79
		(0.01)	(0.01)			(0.01)	(0.01)			
Threatened to use or actually used a gun, knife or other weapon against you	0.01	-0.00	-0.01	0.23	0.01	-0.00	-0.00	0.80	0.64	0.46
		(0.00)	(0.01)			(0.01)	(0.00)			

Marginal effects of probit models reported. Control variables include all baseline characteristics of the woman and her household shown in Tables 2a and 2b.
Two covariates (woman is spouse of HH head, labor income index) dropped in the regressions for the last two outcomes (choked/threatened) due to multicollinearity.
Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 9: 4-year post-program impact of treatment on frequency of IPV in the past 12 months, North and South

	North				South				North versus South	
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value of Cash=Food	P-value of Cash+BCC= Food+BCC
Additive frequency of emotional violence (0-12), last 12m	1.48	-0.14	-0.46***	0.03**	1.28	-0.04	-0.08	0.83	0.71	0.11
		(0.17)	(0.15)			(0.19)	(0.18)			
Additive frequency of physical violence (0-18), last 12m	0.90	-0.23	-0.51***	0.04**	0.61	-0.18	-0.10	0.46	0.81	0.03**
		(0.18)	(0.14)			(0.13)	(0.13)			
Maximum freq. of any emotional violence (0-3), last 12m	0.77	-0.00	-0.16**	0.03**	0.70	0.01	-0.03	0.71	0.95	0.20
		(0.07)	(0.07)			(0.08)	(0.08)			
Maximum freq. of any physical violence (0-3), last 12m	0.42	-0.06	-0.23***	0.00***	0.29	-0.07	-0.05	0.53	0.91	0.01***
		(0.06)	(0.05)			(0.04)	(0.05)			

OLS coefficients reported with standard errors in parentheses (clustered at the village level).
Controls include all baseline characteristics of the woman and her household shown in Tables 2a and 2b.
* p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 10: Lee Bounds; 4-year post program impact on IPV, North

	Emotional violence (last12m) at 4yPP			Physical violence (last12m) at 4yPP		
	Beta	Upper	Lower	Beta	Upper	Lower
Cash vs. Control	0.01	0.02	0.00	-0.04	-0.04	-0.06
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
N	797	788	788	797	788	788
Control Mean	0.44	0.44	0.44	0.26	0.26	0.26
Cash+BCC vs. Control	-0.07	-0.05	-0.08	-0.14	-0.12	-0.14
	(0.04)	(0.04)	(0.04)	(0.03)**	(0.03)**	(0.03)**
N	778	768	769	778	768	769
Control Mean	0.44	0.44	0.44	0.26	0.26	0.26
Cash+BCC vs. Cash	-0.09	-0.07	-0.11	-0.10	-0.06	-0.11
	(0.04)*	(0.04)	(0.04)**	(0.03)**	(0.02)*	(0.03)**
N	787	768	769	787	768	769
Cash Mean	0.46	0.46	0.46	0.23	0.23	0.23

Marginal effects of probit models reported. Controls include all baseline characteristics of the woman and her household shown in Tables 2a and 2b. Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 11: Lee Bounds; 4-year post program impact on IPV, South

	Emotional violence (last12m) at 4yPP			Physical violence (last12m) at 4yPP		
	Beta	Upper	Lower	Beta	Upper	Lower
Food vs. Control	0.01	0.03	-0.00	-0.02	0.01	-0.03
	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)
N	811	797	798	811	797	798
Control Mean	0.40	0.40	0.40	0.17	0.17	0.17
Food+BCC vs. Control	0.01	0.02	-0.01	-0.01	-0.01	-0.04
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
N	836	825	823	836	825	823
Control Mean	0.40	0.40	0.40	0.17	0.17	0.17
Food+BCC vs. Food	-0.01	0.01	-0.05	0.01	0.03	-0.04
	(0.04)	(0.04)	(0.04)	(0.02)	(0.03)	(0.02)
N	823	798	797	823	798	797
Food Mean	0.41	0.41	0.41	0.14	0.14	0.14

Marginal effects of probit models reported. Controls include all baseline characteristics of the woman and her household shown in Tables 2a and 2b. Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 12: 4-year post-program impact of treatment on prevalence of IPV in the past 12 months, North and South (IPW)

	North				South			
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC
Emotional violence (last6m) at 6mPP	0.61	-0.02	0.02	0.39	0.63	0.03	-0.06	0.10*
		(0.05)	(0.05)			(0.06)	(0.06)	
Emotional violence (last12m) at 4yPP	0.44	0.01	-0.07*	0.04**	0.40	0.01	0.00	0.83
		(0.04)	(0.04)			(0.04)	(0.04)	
Physical violence (last6m) at 6mPP	0.30	-0.02	-0.09***	0.04**	0.22	0.01	-0.04	0.11
		(0.03)	(0.03)			(0.04)	(0.03)	
Physical violence (last12m) at 4yPP	0.26	-0.04	-0.14***	0.00***	0.17	-0.02	-0.01	0.59
		(0.03)	(0.03)			(0.03)	(0.02)	

Coefficients show average treatment effects using inverse-probability weighting (IPW) estimators. Control variables include all baseline characteristics of the woman and her household shown in Tables 2a and 2b. Standard errors clustered at the village level. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 13: Social Desirability Score at 4-year post-program regressed on treatment status, North and South

	North				South					
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value: Cash=Food	P-value: Cash+BCC= Food+BCC
Social Desirability Score (0-5)	2.85	0.08	0.19*	0.28	2.90	-0.17	-0.06	0.26	0.09*	0.12
		(0.10)	(0.10)			(0.11)	(0.12)			

OLS coefficients reported with standard errors in parentheses (clustered at the village level). Controls include all baseline characteristics of the woman and her household shown in Tables 2a and 2b. * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 14: Testing for Social Desirability Bias at 4-year post-program

Panel A: North

	Emotional violence (last6m) at 6mPP	Emotional violence (last12m) at 4yPP	Physical violence (last6m) at 6mPP	Physical violence (last12m) at 4yPP
Cash	-0.02	0.03	-0.01	-0.03
	(0.05)	(0.04)	(0.03)	(0.03)
Cash+BCC	0.02	-0.05	-0.09	-0.13
	(0.05)	(0.04)	(0.04)***	(0.03)***
Cash * SDS	0.08	-0.03	0.06	0.02
	(0.04)**	(0.04)	(0.03)*	(0.03)
Cash+BCC * SDS	0.04	0.00	0.04	0.02
	(0.04)	(0.03)	(0.03)	(0.03)
Social Desirability Score (0-5)	-0.04	-0.10	-0.03	-0.05
	(0.02)*	(0.02)***	(0.02)*	(0.02)***
N	1,181	1,181	1,181	1,181
Control Mean	0.61	0.44	0.30	0.26

Panel B: South

	Emotional violence (last6m) at 6mPP	Emotional violence (last12m) at 4yPP	Physical violence (last6m) at 6mPP	Physical violence (last12m) at 4yPP
Food	0.04	0.01	0.01	-0.02
	(0.06)	(0.04)	(0.03)	(0.03)
Food+BCC	-0.05	0.00	-0.05	-0.01
	(0.05)	(0.04)	(0.03)	(0.02)
Food * SDS	0.03	0.04	-0.02	0.04
	(0.04)	(0.04)	(0.03)	(0.03)*
Food+BCC * SDS	-0.04	0.06	-0.01	0.03
	(0.04)	(0.04)*	(0.03)	(0.03)
Social Desirability Score (0-5)	0.01	-0.07	0.02	-0.05
	(0.03)	(0.02)***	(0.02)	(0.02)***
N	1,235	1,235	1,235	1,235
Control Mean	0.63	0.40	0.22	0.17

Marginal effects of probit models reported. Controls include all baseline characteristics of the woman and her household shown in Tables 2a and 2b. Standard errors clustered at the village level and shown in parentheses. Demeaned Social Desirability Score (SDS) used for the interaction terms (to be interpreted as the percentage point difference to the control group due to a one standard deviation increase in the SDS). * p<0.1 ** p<0.05; *** p<0.01

Online Appendix Table 15: 4-year post-program impact of treatment on prevalence of IPV in the past 12 months, North and South (adjusted for multiple hypothesis testing)

	North				South				North versus South	
	Mean of Control	Cash	Cash+BCC	P-value of Cash= Cash+BCC	Mean of Control	Food	Food+BCC	P-value of Food= Food+BCC	P-value of Cash=Food	P-value of Cash+BCC= Food+BCC
Emotional violence (last6m) at 6mPP	0.61	-0.02	0.02	0.41	0.63	0.03	-0.05	0.11	0.51	0.32
Unadjusted p-value		0.70	0.70			0.59	0.33			
FDR-adj. p-value (BKY 2006)		0.79	0.79			1.00	1.00			
FDR-adj. p-value (BH 1995)		0.70	0.70			0.92	0.88			
Emotional violence (last12m) at 4yPP	0.44	0.02	-0.07	0.04**	0.40	0.01	0.00	0.78	0.97	0.20
Unadjusted p-value		0.66	0.10*			0.71	0.92			
FDR-adj. p-value (BKY 2006)		0.79	0.24			1.00	1.00			
FDR-adj. p-value (BH 1995)		0.70	0.26			0.92	0.92			
Physical violence (last6m) at 6mPP	0.30	-0.01	-0.09	0.03**	0.22	0.01	-0.05	0.09*	0.67	0.45
Unadjusted p-value		0.69	0.01***			0.82	0.15			
FDR-adj. p-value (BKY 2006)		0.79	0.03**			1.00	1.00			
FDR-adj. p-value (BH 1995)		0.70	0.03**			0.92	0.88			
Physical violence (last12m) at 4yPP	0.26	-0.04	-0.14	0.00***	0.17	-0.02	-0.01	0.50	0.85	0.00***
Unadjusted p-value		0.23	0.00***			0.33	0.74			
FDR-adj. p-value (BKY 2006)		0.41	0.00***			1.00	1.00			
FDR-adj. p-value (BH 1995)		0.47	0.00***			0.88	0.92			

Marginal effects of probit models reported. Controls of both models (North and South) include all baseline characteristics of the woman and her household shown in Tables 2a and 2b.
Standard errors clustered at the village level (not shown). * p<0.1 ** p<0.05; *** p<0.01

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