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The effect of conditional transfers on intimate partner violence

Evidence from northern Ecuador

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3ie accepted the final version of the report, *Expanding lessons from a randomized impact evaluation of cash and food transfers in Ecuador and Uganda*, as partial fulfilment of requirements under grant TW1.1071 issued under Social Protection Thematic Window. The full report has been split into two separate studies – one on Ecuador and the other on findings from Uganda -- for publication under the 3ie Impact Evaluation Report Series. The report, *The effect of transfers and preschool on children's cognitive development in Uganda*, 3ie Impact Evaluation Report 32, was published earlier in the series.

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The effect of conditional transfers on intimate partner violence: evidence from Northern Ecuador

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Abstract

Using a randomized experiment in Ecuador, this study provides evidence on whether cash, vouchers and food transfers targeted at women and intended to reduce poverty and food insecurity also affect intimate partner violence (IPV). The results indicate that transfers reduce controlling behaviors, moderate physical violence, and any physical or sexual violence by 6 to 7 percentage points. Impacts do not vary by transfer modality, and instead, the initial bargaining power of women is important in determining the magnitude of impact. Possible mechanisms are explored, and the findings suggest that reductions in IPV are due to both improvements in women's bargaining power and decreases in poverty-related conflict.

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Abbreviations and acronyms

ANCOVA	analysis of covariance
ATM	automatic teller machine
BDH	<i>Bono de desarrollo humano</i>
CEPAR	<i>Centro de Estudios de Población y Desarrollo Social</i>
CGIAR	Consultative Group for International Agricultural Research
CT	cash transfer
CCT	conditional cash transfer
DHS	Demographic and Health Survey
IFPRI	International Food Policy Research Institute
IPV	intimate partner violence
PIM	Research Program on Policies, Institutions, and Markets
UCT	unconditional cash transfer
UNHCR	United Nations High Commissioner for Refugees
WFP	World Food Programme
WHO	World Health Organization

1. Introduction

Recent multi-country studies show that intimate partner violence (IPV) is widespread and common. One in three women globally have experienced physical and/or sexual violence by a partner during their lifetime (Devries *et al.* 2013; WHO 2013). In Ecuador, the country examined in this analysis, the lifetime prevalence of IPV is estimated at 35 percent for physical violence, 14.5 percent for sexual violence, and 43.4 percent for psychological violence (Instituto Nacional de Estadística y Censos 2011). Although regional variation exists across provinces within Ecuador, as well as within and between countries globally, the prevalence of partner violence remains high in most parts of the world.

Violence against women hinders development, including progress towards the achievement of the Millennium Development Goals (García-Moreno *et al.* 2005). The consequences of IPV are extensive, ranging from direct physical and mental harm of women and their children to economic losses at the community and national level. Women who are victims of IPV are more likely to have poor health, acquire HIV infections, and develop chronic disease, mental illness, and substance abuse problems (Ackerson and Subramanian 2008; Coker *et al.* 2002; Jewkes *et al.* 2010; Ellsberg *et al.* 2008). Consequently, they are less able to work and contribute productively to society (Sabia, Dills and DeSimone 2013). The ultimate consequence of IPV is suicide (Devries *et al.* 2011) and homicide (Stöckl *et al.* 2013). IPV has also been linked to negative health outcomes among the children of abused women, including low birth weight (Aizer 2011), elevated rates of morbidity (Karamagi *et al.* 2007), increased risk of acute malnutrition (Hasselmann and Reichenheim 2006), and increased risk of infant and child mortality (Åsling-Monemi *et al.* 2003; Ahmed, Koenig and Stephenson 2006). Children exposed to IPV are also more likely to have lower intelligence quotients (IQs) and develop emotional and behavioral problems (Koenen *et al.* 2003; Sternberg *et al.* 1993; Wolfe *et al.* 2003). Although the detrimental effects are well documented, there is less evidence on public policies and programs that could help reduce the prevalence of IPV.

Many poverty alleviation and gender programs throughout the developing world aim at empowering women through economic means such as labor, assets, microfinance or cash transfers. Yet, across and within disciplines as varied as sociology, psychology and economics, there is no consensus on the theories and predicted association between female economic empowerment and IPV (Heise 2012). While long researched in other fields, the contribution of economics to the relationship between a woman's income and IPV has been fairly recent, and depends on how violence is modeled in household bargaining models. In classic household bargaining models, individual control of resources matters because bargaining outcomes depend on threat points such as divorce (Manser and Brown 1980; McElroy and Horney 1981) or non-cooperative equilibriums (Lundberg and Pollak 1993). The more promising an individual's opportunities are outside the household, the more credible the threat point, and therefore the more likely that the intrahousehold distribution of resources will align more closely with that individual's

preferences. In these bargaining models, when violence is *expressive* and used to release frustration, an increase in a woman's income decreases violence by improving her threat point and thus her bargaining power within the household (Farmer and Tiefenthaler 1997). However, when violence is either *instrumental* and used to control the victim's behavior or allocation of resources within the household (Eswaran and Malhotra 2011; Tauchen, Witte and Long 1991), or *extractive* and used to extract monetary transfers from the victim or her family (Bloch and Rao 2002), an increase in her income may in fact increase violence.

Given the lack of consensus on theories related to a woman's income and IPV, it is no surprise that the empirical evidence is also mixed. To add to the ambiguity, few studies have accounted for the endogeneity of economic status or income, and thus most of the evidence consists of basic associations that tell us little about the causal mechanisms (Heise 2011). The few studies that have attempted to account for the endogeneity of income or economic status have used exogenous variation in either demand or supply of labor (Aizer 2010; Chin 2011) or randomized allocation of microfinance (Pronyk *et al.* 2006), and have found a negative relationship between a woman's economic status and IPV.

Building off a robust body of literature on the social impacts of cash transfer (CT) programs, a number of papers have examined linkages between CTs and IPV (Bobonis, Gonzalez-Brenes and Castro 2013; Hidrobo and Fernald 2013; Perova 2010; Angelucci 2008; Haushofer and Shapiro 2013). CTs have become one of the most popular policy interventions to tackle poverty and increase human capital in developing countries. Although the details of program design vary, all such programs transfer monetary resources to poor households, often conditional on them taking active measures to improve the human capital of their children (such as enrolling their children in school or taking them for regular healthcare visits). In the vast majority of cases, transfers are made to women because they are more likely to reinvest resources into the family's well-being (Thomas 1997; Quisumbing and Maluccio 2000; Hoddinott and Haddad 1995). While the impact of CTs on poverty, education and health has been well studied, there is growing interest in understanding how such transfers impact intrahousehold dynamics. Of special interest is whether transfers have any consequences with respect to IPV.

Evidence on the relationship between IPV and CT programs is concentrated in Latin America. In Peru, Perova (2010) uses difference-in-difference and matching techniques to isolate the effect of Peru's conditional cash transfer (CCT) program, *Juntos*, on IPV, and finds that *Juntos* decreases physical and emotional violence by 9 and 11 percentage points, respectively. Hidrobo and Fernald (2013) take advantage of the randomized roll-out of Ecuador's national unconditional cash transfer (UCT) program, the *Bono de desarrollo humano (BDH)*, and find that for women with more than primary education, transfers decrease emotional violence by 8 percentage points and controlling behaviors by 14 percentage points, but have no effect on physical violence. For women with primary

education or less, the direction of impact depends on her education relative to her partner's. Using non-experimental estimators, Bobonis and colleagues (2013) find that after two to five years in the program, women in Mexico's CCT, *Oportunidades*, are 5 to 7 percentage points less likely to experience physical abuse in the last year, but are more likely to receive violent threats with no associated physical abuse. Finally, in the only study we are aware of outside Latin America, Haushofer and Shapiro (2013) examine the *GiveDirectly* cash transfer program in Western Kenya and find that transfers lead to a 7 to 11 percentage point reduction in physical violence and a 5 percentage point reduction in sexual violence, but have no impact on emotional violence.

Using a randomized experiment conducted in 2011 in Northern Ecuador, this study evaluates whether cash, vouchers and food transfers, targeted to women and intended to reduce poverty and food insecurity among the urban poor, also impact IPV. The design of the study is novel and contributes to the existing knowledge surrounding transfers and IPV in a number of important ways. First, the randomized study design and panel data on women's experience with IPV provide the most robust evidence on how transfers impact IPV. The randomization avoids issues of bias due to endogeneity of income or selection into the program, and the panel data allows us to control for baseline patterns of violence.

Second, comparison of the three transfer modalities – cash, vouchers or food – provides evidence on whether the mode of transfer affects impact. While a companion study (Hidrobo *et al.* 2014) finds that the transfer modalities were infra-marginal¹ and thus had similar impacts on the value of food, non-food and total consumption, this study finds that differences across modalities could emerge in who controls the transfer or the likelihood of it being commandeered by one partner. Descriptive statistics suggest that food is significantly more likely than cash or food vouchers to be controlled by the female spouse (60 percent for food compared to 50 percent and 48 percent for cash and vouchers respectively), while cash and vouchers are significantly more likely than food to be controlled by the household head and spouse together. Moreover, there are restrictions on how transfers can be used that vary by modality. The food transfer, which is composed mainly of staple goods, is expected to be consumed by the household and thus presents little opportunity for generating conflict within the household.² Similarly, the food voucher is redeemable for only a predetermined list of nutritious foods at a specified supermarket within each urban center. The voucher is nontransferable and thus cannot be extracted and used for anything other than the pre-approved list of food items by the cardholder him- or herself. Cash, on the other hand, can be utilized by the household to spend

¹ Economic theory predicts that cash and in-kind transfers of equal size will have similar impacts on a household's utility and consumption if the value of the in-kind transfer is less than that which a household would have spent on that particular good ('infra-marginal') and if there are no transaction costs.

² Although it is possible that food could be extracted and sold for cash, there is little evidence that this occurred in this study.

without restrictions and thus has more opportunity to lead to conflict over its use. Consequently, if partners use IPV as a tool to extract resources, then we would expect to observe a larger increase in IPV among households receiving cash compared to the food or voucher condition. Therefore, comparison of transfer modalities provides further insight into theories on IPV, especially with regard to extraction theories, and addresses policymakers' fear that cash could lead to conflict over spending, or be confiscated by partners.

Third, we collect direct measures of women's bargaining power in the household, which allows us to explore whether baseline bargaining power influences the direction or size of impact. Economic models where violence is *instrumental* predict an ambiguous relationship between a woman's income and IPV where the relationship between income and IPV depends on a woman's baseline bargaining power or autonomy. In the Tauchen and colleagues model (1991), the relationship between a woman's income and IPV depends on whether her utility from marriage equals that out of marriage. In Eswaran and Malhotra (2011), the equilibrium level of violence depends on the extent to which a woman exercises autonomy and whether an increase in her income or reservation utility leads her to allocate resources more in line with her preferences, so much so that it increases violence. Empirically, studies on CTs and IPV have found that impacts vary in accordance with a woman's bargaining power (Bobonis, Gonzalez-Brenes and Castro 2013; Hidrobo and Fernald 2013; Perova 2010). However, these studies typically utilize indirect measures of bargaining power, such as education or age, which may be correlated with other outside factors, including household poverty. In contrast, we collect questions on women's decision making within the household, which we use to operationalize her relative bargaining power.

Lastly, we explore the potential mechanisms and theories that could explain our results. We draw on theories from both the economics literature on household bargaining models, and from the sociological literature on family stress and absolute resource theory. Family stress and absolute resource theory assert that economic strain and poverty-related stressors may lead to increased conflicts between partners and to feelings of frustration and stress that are expressed as violence by either partner (Fox *et al.* 2002; Vyas 2012). Thus, interventions such as cash transfers that improve a family's economic situation may lead to a decrease in IPV by reducing stress-related conflict. In contrast to these models, in economic household bargaining models the relationship between income and IPV depends on who receives the income and how violence is modeled (expressive, instrumental, or extractive).

Consistent with evidence on IPV from other studies, we find that transfers decrease the probability that women experience controlling behaviors, moderate physical violence, and any physical or sexual violence by 6 to 7 percentage points (or approximately a 38 to 43 percent decrease). This effect does not vary significantly by treatment modality, a fact

that, combined with the observed reductions in IPV, suggests that violence is not being used to extract resources forcefully. Instead, we find that initial conditions and particularly power dynamics between partners determine the magnitude of impact. In particular, we find that the decrease in IPV is concentrated among women with low decision-making power at baseline. We explore potential mechanisms through which transfers decrease violence and find suggestive evidence that overall reductions in IPV may be due to both improvements in women's bargaining power within the household and decreases in poverty-related stress and conflict.

The rest of this paper is structured in the following way: section 2 introduces the program and study area; section 3 presents the study design and data; section 4 discusses the empirical methods used to evaluate the impact of transfers on IPV; section 5 presents the impact results; section 6 discusses possible theories and pathways that could explain our results; and section 7 concludes with a discussion of limitations and research implications for expanding the body of evidence.

2. Study area and intervention

In the last three decades, Ecuador's economic and political transitions have improved women's opportunities and rights. The first legislation specifically criminalizing violence against women in Ecuador, the Law Against Violence Towards Women and the Family, was drafted in 1995 and accompanied in subsequent years by revisions to the Constitution to guarantee equal rights for men and women (Inter-American Commission on Human Rights 2011). In addition, to facilitate reporting by women, female-operated police stations offering a host of women-centered services, *Comisarías de la Mujer y la Familia*, were established in major urban centers throughout the country. But despite progressive legislation and institutional action to address gender inequities and violence, prosecutions are rare and violence and discrimination against women remains high across socioeconomic groups in Ecuador. The most recent national survey estimates a lifetime prevalence of IPV among women aged 15 and older at nearly 48.7 percent (Instituto Nacional de Estadística y Censos 2011).³ The prevalence of IPV varies across provinces from 36.1 percent in Manabí to 63.7 percent in Morano Santiago. In the study provinces of Carchi and Sucumbíos, the prevalence of lifetime IPV is approximately 49 percent and 41 percent respectively. In addition, IPV is highest among women who are indigenous, have no formal education, and have children.

In April 2011, the World Food Programme (WFP) expanded its assistance to address the food security and nutrition needs of Colombian refugees and poor Ecuadorians, and to support the integration of refugees into Ecuadorian communities. The new program was designed as a prospective randomized controlled trial. It consisted of six monthly transfers

³ This includes physical, sexual, psychological and patrimonial violence. Patrimonial violence is defined as the obstruction or retention of personal objects, properties, or values.

of cash, vouchers or food to Colombian refugees and poor Ecuadorian households. In addition to improving the food consumption of poor households, a goal of the program was to improve the role of women in household decision making, particularly related to food and nutrition.⁴ Consequently, the program specifically targeted women within households.⁵ Although the program did not intend to impact IPV, there were concerns that transfers to women – specifically cash – intended to improve the food security of poor households, could unintentionally increase conflict within the household.

The experiment was conducted in seven urban centers, with large Colombian refugee populations, in the provinces of Carchi and Sucumbíos in Northern Ecuador. The seven urban centers were selected by WFP based on the following criteria: 1) percentage of refugees in the population exceeding 10 percent; 2) poverty index exceeding 50 percent; 3) presence of implementing partners for food distribution; and 4) presence of financial institutions to distribute cash disbursements via automatic teller machines (ATMs). Neighborhoods (or *barrios*) within these urban centers were then pre-selected for the intervention by the WFP in consultation with the United Nations High Commissioner for Refugees (UNHCR) as areas that had large numbers of Colombian refugees and relatively high levels of poverty. To determine program qualification, all households within the pre-chosen *barrios* were mapped and administered a short census survey. Households were ranked according to a proxy means test based on asset ownership, employment, food security, demographics and nationality, and a cut-off score was determined based on project budget constraints. Based on point scores by nationality, the decision was made to enroll automatically all Colombian and mixed-nationality households. In addition, households were excluded from eligibility if they were current recipients of the government's social safety net, the BDH, which targeted poor households with school-age and young children.

Participating households received benefits from April 2011 to September 2011. The value of the monthly transfer was standardized across all treatment arms and was equivalent to USD40 per month per household for a total of USD240 over the six-month study period. The monthly value was approximately 11 percent of a household's pre-transfer monthly consumption. The food transfer contained rice (24 kg), lentils (8 kg), vegetable oil (4 liters) and canned sardines (8 cans, each 0.425 kg). The food voucher was redeemable at local supermarkets for a pre-approved list of nutritious foods. The cash was distributed through preprogrammed ATM cards. The transfers were conditional on attendance of monthly

⁴ Formally, the objectives of the program were threefold: 1) to improve food consumption by facilitating access to more nutritious foods; 2) to strengthen the role of women in household decision making related to food consumption; and 3) to reduce tensions between Colombian refugees and host Ecuadorian populations.

⁵ Although the program was targeted to women, men were also allowed to participate if there was no qualifying adult woman in the household at the time of enrolment. Among all beneficiary households, approximately 79 percent of registered beneficiary cardholders in Carchi and 73 percent of registered beneficiary cardholders in Sucumbíos were women (WFP-Ecuador 2011).

nutrition trainings, which were standardized across treatment arms. The timings of disbursement, frequency and value of transfers were equalized across modalities to ensure that differences in outcomes were attributable to the modality and not to other confounding factors. Evaluation of the transfer program showed significant improvements in food consumption and dietary diversity across all transfer modalities, thus demonstrating that the program met its goal of improving overall food security (Hidrobo *et al.* 2014).

3. Study design and key indicators

3.1. Study design

The program evaluation was based on a random assignment of the intervention. Due to differences in the socioeconomic and geographic characteristics of the study provinces, Sucumbíos and Carchi, the randomization was stratified at the province level. Randomization was conducted in two stages: first, neighborhoods within the urban centers were randomized to either treatment or control groups; and second, clusters within the neighborhoods were randomized to cash, voucher or food. The two-stage randomization was to ensure that households in control neighborhoods were in geographically distinct locations from those in treatment neighborhoods to help mitigate possible discontent among neighbors not receiving the transfer. In total, 80 neighborhoods and 145 clusters were randomized into the four intervention arms: control, cash, vouchers and food.⁶

In order to evaluate the transfer program, baseline (March 2011) and follow-up surveys (October to November 2011) were conducted by the International Food Policy Research Institute (IFPRI) in collaboration with a local survey firm, *Centro de Estudios de Población y Desarrollo Social* (CEPAR). In total, 2,357 households were surveyed at baseline and 2,122 at follow-up. Household surveys collected information on household characteristics, demographics, food consumption, labor, education and health. The survey also collected detailed information on women's status in the household, household decision making, and IPV. Further details about the sampling strategy, evaluation sample and intervention can be found in Hidrobo *et al.* (2014, 2012).

3.2. Violence and empowerment variables

Violence indicators were collected in accordance with the World Health Organization (WHO) protocol on ethical guidelines for conducting research on IPV (WHO 2001). In particular, we ensured adequate training of interviewers, enacted safety measures that

⁶ Initially, 81 neighborhoods and 146 clusters were surveyed for the census, but subsequently, one cluster and neighborhood was dropped from the study, given that the majority of households in the areas were receiving the BDH.

guaranteed privacy during interviews, and interviewed only one woman per household to ensure that no other household member was aware that survey questions involved disclosing IPV. In addition, enumerators provided all women with disguised contact information for local IPV support services for referral, regardless of disclosure of IPV. These services were woman-centered and woman-staffed *Comisarías de la Mujer y la Familia* in each urban center and included female police officers and social services.⁷ To be eligible for interview for the IPV module, women had to be 15 years or older, have been in a relationship in the last six months, and be either the household head or partner of the household head. This last restriction made it more likely that the woman interviewed was also the woman who received the transfer, although we did not directly verify this in the interview. Only women who could be interviewed in private were administered the IPV module.⁸

In order to elicit accurate assessments of violence, we administered multiple behaviorally specific questions on a range of abusive acts, a technique shown to maximize disclosure (Ellsberg *et al.* 2001). Indicators of internationally validated standardized IPV measures from the WHO Violence Against Women Instrument (Ellsberg and Heise 2005; Straus 1979; Hindin, Kishor and Ansara 2008) were administered and included three types of violence (physical, sexual, emotional) and controlling behaviors. To correspond with the length of the transfer period, we asked about violent acts experienced over the past six months as well as any violence experienced by the respondent in her lifetime.

Following WHO and Demographic and Health Survey (DHS) protocol, we constructed binary indicators for the following five behaviors experienced in the last six months: 1) controlling behaviors; 2) emotional violence; 3) moderate physical violence; 4) severe physical violence; and 5) any physical or sexual violence. In the follow-up survey there are six questions that are categorized as 'emotional violence', four categorized as 'controlling behavior', two categorized as 'moderate physical violence', five categorized as 'severe physical violence', and two categorized as 'sexual violence' (see Appendix Table A1 for questions and corresponding categories).⁹ For controlling behaviors, emotional violence, moderate physical violence, and severe physical violence, we create indicators that equal one if the respondent answered yes to any of the corresponding violence questions within each category in the last six months. For physical or sexual violence, we create an indicator that equals one if the respondent experienced any of the seven physical violence

⁷ Although we were not able to track specific women, or the number of women who accessed services, there were no adverse events reported by the survey teams in relation to implementation of the IPV module during the baseline or follow-up survey.

⁸ Women who were not alone at the time of the interview could not be administered the IPV module. Instead, enumerators were instructed to either find a place where they could be alone, or come back to the household at another time when the woman would be alone. If neither of these two options was feasible, the woman was not administered the IPV module.

⁹ The baseline survey only had two questions on controlling behaviors and three on emotional violence.

indicators (two moderate violence indicators in addition to the five severe violence indicators) or any of the two sexual violence indicators.

Although empowerment can be defined in a number of ways across different disciplines, conceptualization generally refers to 'women's ability to make decisions and affect outcomes of importance to themselves and their families' (Malhotra, Schuler and Boender 2002). Within this definition, researchers have focused on both direct and indirect measures of empowerment. Direct measures generally focus on the expansion of a woman's set of available choices and the ability to transition these choices into desirable outcomes. Indirect or proxy measures generally focus on the possession of resources, both tangible, such as assets, or intangible, such as education or social capital, which may then lead to or facilitate empowerment. Although there are numerous measures and proxies for women's empowerment, such as women's absolute and relative education, age, or security in marital arrangements, we use a direct measure of women's decision making within the household.

To measure women's decision making, we follow the approach used by the DHS, which asks women to consider their relative decision-making power across a number of domains. In both baseline and follow-up surveys, we ask the same woman who answers the IPV module who in the household generally has the final say in decisions across eight domains: 1) whether or not the woman works for pay; 2) children's education; 3) children's health; 4) woman's own health; 5) small daily food purchases; 6) large food purchases; 7) large asset purchases (such as furniture or TV); and 8) whether or not to use contraceptives. The responses to these questions could be the following: (a) the woman herself; (b) her spouse or partner; (c) the woman and spouse/partner together; (d) someone else in the household; (e) the woman and someone else together; or (f) the decision is not applicable (for example, domains [2] and [3] in a household without children). We construct an indicator for high sole or joint decision making if the respondent reports having sole or joint decision-making power across all applicable domains. Thus, women with low decision-making power are those who have no say in one or more decision domains, i.e. only the man (or someone else) can decide, regardless of her preferences. Cross-tabulations of this indicator with other indirect measures of empowerment show that women with high decision-making power are significantly more likely to have some secondary education, have worked in the last six months, and are significantly less likely to have experienced controlling behaviors and IPV (correlations available upon request).

3.3. Study sample and attrition

Of the 2,357 households interviewed at baseline, 2,101 had a female head of household or spouse eligible to be administered the household decision-making or IPV module (Figure 1). From these households, we restrict our analysis to women aged 15 to 69 years who are married or in unions at baseline, for a total of 1,445 women.¹⁰ We exclude women over the age of 69 (18 observations) because IPV is rare among this group and many of the indirect measures of empowerment, such as employment and labor income, no longer apply. Of the 1,445 women 15 to 69 years in relationships at baseline, 1,425 (or 98.6 percent) were alone at the time of the interview and thus administered the IPV module. Of these women, 1,266 were resurveyed at follow-up and 1,231 were alone at the time of the interview and thus administered the IPV module. Thus, the sample for this analysis consists of 1,231 women aged 15 to 69 years in a relationship at baseline, with baseline and follow-up data on IPV.

As a consequence of the sensitivity and requirements for being administered the IPV questions described above, attrition in our sample is relatively high. Of the eligible baseline sample of 1,445 women aged 15 to 69 years in a relationship, 85 percent (or 1,231) were administered the IPV questionnaire at baseline and follow-up. While most of the attrition is due to not finding the same household or women from baseline to follow-up, 4 percent is due to the woman not being alone at the time of the interview (either at baseline or follow-up). If attrition is correlated with treatment assignment, then this could potentially bias the estimates of the impact of a transfer on IPV. As Table 1 reveals, there are no significant differences in attrition rates between the control arm and any of the treatment arms. Although attrition rates are similar across arms, differential attrition in characteristics across treatment and control arms could threaten the internal validity of the study. Table 2 reveals that with the exception of the asset index and lifetime prevalence of any violence, there are no significant differences in baseline characteristics for those who attrited across treatment and control arms (column 8). Both the asset index and any violence are balanced across treatment and control arms for those who stay in the study. Thus, any bias from differential attrition is likely to be small. Even so, as a robustness check we bound our estimates using Lee bounds (Lee 2009).

3.4. Baseline analysis

To ensure that the success of the initial randomization still holds for the sample of 1,231 women used in this analysis, we compare baseline characteristics across treatment and control women. Table 3 shows that randomization was largely effective in balancing

¹⁰ Although IPV decreases with age, we do not restrict our sample to the more common age range of 15 to 49 years because we are interested in the impact on program participants and not a subsample of participants. Our results, however, are robust to restricting the analysis to women 15 to 49 years.

baseline characteristics. Across 23 difference-in-means tests between treatment and control women, only two are statistically different at the 5 percent level. In particular, women in the control group have significantly larger households and are significantly less likely to have experienced moderate physical violence from their partner at baseline. While this imbalance in our outcome variable would most likely lead to an underestimate of our impact results, our empirical specifications minimize any bias by controlling for baseline levels of violence. Similar balance tests are conducted across the control arm and each treatment arm, and, again, show that randomization was in general successful (Appendix Table A2). Across 138 (23 x 6) difference-in-means tests, six are statistically different at the 5 percent level.

Table 3 also reveals that the baseline prevalence of IPV is high among the study sample, with 16 percent of women experiencing combined physical and/or sexual violence and 26 percent experiencing emotional violence in the previous six months. With regard to severity of physical violence, a higher percentage of women at baseline experience moderate physical violence as compared to severe physical violence in the last six months (14 percent versus 7 percent). Similar to the national prevalence rate of IPV of 48.7 percent, the lifetime prevalence rate of any violence – emotional, physical or sexual – in our sample is 49 percent. Women in the study sample have a mean age of 35 years, 39 percent have at least some secondary education or higher and 42 percent are married. In addition, 36 percent of women were born in Colombia and 32 percent report working in the last six months. Almost half (46 percent) of the women in the sample have high decision-making power, defined as having sole or joint decision-making power across all applicable domains. Male partners in the sample are similar to women in terms of education (38 percent have at least some secondary education or higher), but they are on average four years older and 96 percent report working in the last six months.

4. Methodology

To estimate the impact of transfers on IPV, we take advantage of the randomized experimental design and conduct an intent-to-treat analysis. This approach avoids bias that may occur due to selection into and out of the program. Moreover, we take advantage of baseline data and estimate the treatment effect using analysis of covariance (ANCOVA), which controls for the lagged outcome variable. ANCOVA estimates are preferred to difference-in-difference estimates when the autocorrelation of outcomes is low (McKenzie 2012). Intuitively, if autocorrelation is low, then difference-in-difference estimates will overcorrect for baseline imbalances. ANCOVA estimates, on the other hand, will adjust for baseline imbalances according to the degree of correlation between baseline and follow-up and lead to a more efficient estimation of impact. Given that the autocorrelation between baseline and follow-up of our IPV outcomes is relatively low

(between 0.18 and 0.36)¹¹ and that the indicators of interest are binary, we estimate the treatment effect using the following ANCOVA probit model for pooled treatment:¹²

$$(1) \quad \text{Prob}(Y_{ij1} = 1) = \Phi(\alpha + \beta_T \text{Treat}_j + \gamma Y_{ij0} + \delta P_{ij})$$

where Y_{ij1} is the IPV outcome of interest for woman i from cluster j at follow-up and Y_{ij0} is the IPV outcome of interest at baseline. As previously mentioned, our five outcomes are measures of: 1) controlling behaviors; 2) emotional violence; 3) moderate physical violence; 4) severe physical violence; and 5) any physical or sexual violence. Φ is the cumulative distribution function of the standard normal distribution. Treat_j is an indicator that equals one if cluster j is in any treatment arm, and β_T represents the intent-to-treat estimator, or the effect of being assigned to any treatment arm. P_{ij} is an indicator for the level of stratification or province and equals one if a woman resides in Carchi at baseline. In all regressions, we adjust standard errors for clustering.

Given the relative success of the random assignment, the inclusion of baseline controls is not necessary to obtain unbiased estimates of β . For most estimates, however, we account for baseline socioeconomic characteristics in order to increase the precision of the estimates and control for any minor differences between treatment and control arms at baseline. The core group of baseline control variables are: woman's age (years); partner's age (years); indicator for whether the woman has at least some secondary education; indicator for whether the partner has at least some secondary education; indicator for whether the woman was born in Colombia; indicator for whether the woman is married; indicators for whether the woman is indigenous or Afro-Ecuadorian; indicator for whether the woman worked in the last six months; indicator for whether the woman has high sole or joint decision-making power; number of children 0 to 5 years old in the household; number of children 6 to 15 years old in the household; household wealth indicators;¹³ and indicators for province of residence.

To estimate whether the impact on IPV varied by modality, we estimate the following equation:

$$(2) \quad \text{Prob}(Y_{ij1} = 1) = \Phi(\alpha + \beta_f \text{food}_j + \beta_c \text{cash}_j + \beta_v \text{voucher}_j + \gamma Y_{ij0} + \delta P_{ij})$$

¹¹ While we did not collect information on the frequency of violence, other studies have shown that 65 percent of physical violence is of low frequency (one or two incidents in the last 12 months), and thus, it is not surprising that we observe low autocorrelation in IPV with our six-months indicators (Whitaker *et al.* 2007).

¹² Results are robust to using a linear probability model.

¹³ The household wealth indicators (four indicators, or one for each wealth quartile) are constructed from a wealth index that is created using the first principal from a principal components analysis. Variables used to construct the index are housing infrastructure indicators (for example, type of floor, roof, toilet, light, fuel, water source) and 11 asset indicators (for example, refrigerator, mobile phone, TV, car, computer).

The indicators $food_j$, $cash_j$, and $voucher_j$ are equal to 1 if cluster j is in the corresponding treatment arm. Coefficients β_f , β_c , β_v represent the intent-to-treat estimators, or the effect of being assigned to the specific treatment arm. To test whether the estimators are statistically different by treatment arm, we conduct tests of equality and report the p-values.

Lastly, we estimate the differential effect of treatment by a woman's baseline decision-making power by creating an interaction term of the pooled treatment indicator ($Treat_j$) with the indicator for whether or not a woman has high sole or joint decision-making power (D_i). Specifically, we estimate:

$$(3) \quad Prob(Y_{ij1} = 1) = \Phi(\alpha + \beta_1 Treat_j + \beta_2 Treat_j * D_i + \sigma D_i + \gamma Y_{ij0} + \delta P_{ij})$$

In this equation, β_1 corresponds to the impact of being in the treatment arm for women with low decision-making power at baseline, while $\beta_1 + \beta_2$ corresponds to the impact of being in the treatment arm for women with high decision-making power at baseline. Thus, β_2 is the differential impact with respect to decision making of the pooled treatment.

5. Results

5.1. Impact of pooled treatment

Table 4 presents ANCOVA estimates (Equation 1) of the pooled treatment on controlling behaviors and IPV outcomes. The first column for each outcome presents coefficients controlling only for the level of stratification (or province) and baseline prevalence, whereas the second column includes the full set of control variables. Coefficients from probit models are converted to marginal effects evaluated at the mean of the independent variable. Table 4 reveals that there are significant program impacts leading to decreases in controlling behaviors, moderate physical violence, and physical or sexual violence ranging from 6 to 7 percentage points. Compared to baseline averages, these are decreases ranging from 38 percent for any physical and/or sexual violence to 43 percent for moderate physical violence. There are no significant impacts on emotional violence or severe physical violence. In all cases, the inclusion of control variables has very little impact on the size or significance of coefficients. Table 4 also reveals that women who are older, have at least some secondary education, are married, and did not work in the last six months, are less likely to experience controlling behaviors by their partner. Similarly, women who have at least some secondary education, are married and have fewer children 0 to 5 years old, are less likely to experience emotional violence. Married women are also less likely to experience any physical or sexual violence in comparison to women in cohabiting unions or partnerships.

Table 4 aggregates information over multiple indicators in order to present general findings on different domains of IPV, with any physical or sexual violence being the most common measure used across fields to analyze IPV. As a complement to the summary

measures, we also examine impacts on each individual indicator used to construct the IPV measures (Table 5).¹⁴ Results indicate negative relationships for 15 out of the 19 indicators, which are significant for the following five: accused her of being unfaithful; limited her contact with friends and family; humiliated or insulted her; pushed, shook, or threw something at her; and slapped or twisted her arm. Severe physical and sexual violence indicators rarely occur in our sample, and thus, it is no surprise that we find no impact on these individual indicators.

Impact by treatment modality

Table 6 explores whether there are differences in impact across modalities (Equation 2). For all estimations we include a full set of control variables; however, we only present the marginal effects of program impact. P-values from tests of differences on the size of impact across modalities are presented at the bottom of the table. We find that food transfers result in significant and negative impacts on moderate physical violence, and physical or sexual violence; cash results in significant and negative impacts on controlling behaviors and moderate physical violence; and vouchers result in significant and negative impacts on all three (controlling behaviors, moderate physical, and physical or sexual violence). Impacts for these three outcomes are similar in magnitude to the pooled treatment effect, ranging from 5 to 8 percentage point reductions. As shown by the p-values at the bottom of the table, the effects across transfer modality are not statistically distinguishable from each other, thus revealing no significant differences in impact across modalities.

5.2. Heterogeneous effects

Although we find that, on average, transfers lead to large decreases in IPV, earlier research suggests that the initial condition of bargaining power between the woman and her partner may be an important factor in realizing impacts. We test for the importance of initial bargaining power by analyzing the interaction between women's high decision-making power and the treatment indicator (Equation 3). Results indicate that the marginal effect of pooled treatment for women with low sole or joint decision making is large and significant for all outcomes. In particular, women with low decision making are 11 percentage points less likely to experience controlling behaviors, 7 percentage points less likely to experience emotional violence, 10 percentage points less likely to experience moderate physical violence, 5 percentage points less likely to experience severe physical violence, and 11 percentage points less likely to experience any physical or sexual violence (Table 7). The interaction term between decision making and the treatment indicator is positive and significant for three out of the five outcomes, which reveals that

¹⁴ For the 19 individual indicators on IPV, we run into a problem of multiple comparisons, where the probability that we wrongly reject a true null hypothesis for at least one outcome is greater than the significance level used for each test. Thus, our preferred estimates are the ones in Table 4 that show the summary indicators.

the impact on IPV for women with high decision making is significantly smaller in magnitude than that for women with low decision making. For women with high decision making, the impact on controlling behaviors and IPV is close to zero across all outcomes.

To demonstrate that these heterogeneous impacts are not a function of other factors related to decision making, including education, employment or province of residence, we replicate the analysis, controlling simultaneously for interactions between these three additional factors and the pooled treatment (Appendix Table A3). While there is a small decrease in the size of the coefficient of the treatment indicator, the same general relationship holds for program impact across outcomes and decision-making status. In particular, the decrease in IPV is significantly smaller in magnitude for women with high decision-making power.

5.3. Robustness

Although treatment was not significantly associated with attrition from baseline to follow-up (Table 1) and those who attrited across control and treatment arms are similar on most observable characteristics (Table 2), attrition may be correlated with unobserved heterogeneity in the outcome variables. To address issues of non-random sample selection, we bound our treatment estimates following Lee (2009). The idea behind Lee bounds is to construct worst-case scenarios by assuming those women who select into the sample because of treatment (marginal women) are at the very top or very bottom of the distribution. Thus, trimming the upper and lower tails of the distribution of the outcome variable by the proportion of marginal women yields bounds on the treatment effects. Appendix Table A4 reveals tight bounds on the pooled treatment estimates, which is not surprising given that the difference in non-missing observations between the treatment and control arms is quite small. Moreover, Table A4 reveals that even the upper bound estimates show large and significant negative impacts on controlling behaviors, moderate physical violence, and any physical or sexual violence. Appendix Table A5 reveals similar results across treatment arms. Given that attrition rates for the cash arm were more similar to the control arm than attrition rates for the food arm (Table 1), the cash arm has tighter bounds compared to the food arm. Even so, there are no differences in impact across arms in the upper bound estimates. For lower bound estimates, all three arms lead to large decreases in controlling behaviors, moderate physical violence, and any physical or sexual violence; however, food leads to larger decreases than cash for moderate physical violence, severe physical violence, and any physical or sexual violence.

6. Possible mechanisms

While our results provide strong evidence that transfers reduce IPV among the study population, the pathway or mechanism through which this occurs is unclear. There are a couple of plausible explanations for why we might see a negative impact of transfers on IPV and no difference across modalities. The first is related to economic household

bargaining models where the allocation of resources within the household depends on the resources of the individual decision makers (Thomas 1990; Browning *et al.* 1994). In these models, transfers improve a woman's reservation utility, or options outside of marriage, thus strengthening her bargaining power within the household. When violence is expressive or instrumental, theory predicts that her partner would in general respond to the improvement in her reservation utility by reducing the amount of violence inflicted on her.¹⁵ Alternatively, the decrease in IPV may be due to reductions in conflict and conflict-related stress in the relationship. Absolute resource theory and stress theory from sociology predict that IPV decreases with transfers by improving a household's economic situation and food security, thereby reducing poverty-related stressors on couples and households (Fox *et al.* 2002; Vyas 2012). Since arguments over money are a frequent trigger for violence, reducing poverty-related stress could reduce IPV. We explore both these alternative theories in the analysis below.

If the pathway through which we observe a decrease in IPV is through improvements in women's bargaining power, then we would expect to see that the allocation of intrahousehold resources aligned more in women's favor. For example, we may expect to see increases in child-related expenses. We investigate whether the program changed the intrahousehold allocation of resources by comparing impacts of the program on the following expenditures: male adult clothes, female adult clothes, and children's clothes.¹⁶ We focus on these items because they are the only non-food expenditures that are specifically disaggregated by age and gender. We conduct our analysis on the pooled treatment, and also by baseline bargaining power to see if impacts on intrahousehold bargaining are aligned with impacts on IPV. We also disaggregate our treatment indicator by male and female transfer recipients, since bargaining outcomes depend on who receives the transfer. Although the transfer was targeted to women, in our sample, 26 percent of beneficiaries who received the last transfer were male. While the gender of the recipient is not exogenous, and thus should be interpreted with caution, comparison of

¹⁵ When violence is instrumental, there are cases where the increase in a woman's bargaining power is so great that it may also lead to increases in violence.

¹⁶ A companion paper also looks at impacts of the transfers on the Food Engle curves (Gilligan *et al.* 2014). Similar to the other studies in Latin America, the Food Engle curve for our study population is downward sloping. Thus, as total consumption increases, food shares decrease. However, in contrast to the predictions of the Food Engle curves, the WFP transfer program leads to a 2 to 3 percent increase in the food share. The two plausible explanations for this increase are either that the transfers which were targeted to women changed the control over household resources and thus shifted them more in line with her preferences, or that preferences in general changed due to the nutrition trainings and the labeling of the transfers for food security. Gilligan *et al.* (2014) test the first hypothesis by comparing the impact on female-only headed households versus female- and male-headed households, and find that food shares increased for both single headed and non-single headed households, thus suggesting that preferences in general changed. Given that the transfers were labeled as being for food and nutrition, it is not a surprise that the program may have changed preferences and increased the food shares.

their consumption patterns can provide insights on whether allocation of resources within the household differed depending on who received the transfer.

We estimate the impact of the transfers on the probability of purchasing items and also on the value of expenditures and expenditure shares. Tobit models are used to estimate the impact on log expenditures and expenditure shares because a large fraction of households have zero expenditure on clothing in the last three months. Table 8 shows that transfers lead to a large and significant increase in the probability of a household spending more on children's clothing. Similar to impacts on IPV, the increase in spending on children's clothing is concentrated in households where women have low baseline bargaining power. Impacts on children's clothing are also concentrated in households where women are the transfer recipient, which is consistent with bargaining models. For adult male or female clothing, there are no significant increases in spending, although differences in spending occur across male and female recipients, with male recipients spending more on male clothing than females. In general, these patterns reveal a change in the allocation of resources within the household that are more aligned with a woman's preferences, especially with respect to child expenditures.

In contrast to bargaining theories, theories on stress and absolute resources predict that transfers decrease poverty-related stress and thus IPV. If this is the case, then we would expect transfers to men or women to have similar impacts on IPV. To explore this hypothesis further, we estimate the impact of transfers on IPV by gender of the household member who usually received the transfer, but again, we do so with the caveat that the gender of the recipient is not exogenous, and thus should be interpreted with caution. Since the intervention was explicitly targeted and publicized as a woman-centered program, households in which men received the transfer are arguably different from those with female recipients. However, if we believe that male recipients are more likely to be controlling, then we would expect the impact of treatment for male beneficiary households to be biased towards zero. Results indicate that transfers to both males and females decrease IPV and that there are no significant differences across gender (Table 9), which suggests that an improvement in household well-being is a plausible mechanism through which transfers decrease IPV. Although we did not collect direct measures of stress, a companion mixed-methods paper to this impact analysis further supports theories on stress, and shows that transfers lead to a decrease in tensions and disputes in the household, especially over daily food purchases, and an increase in happiness and 'locus of control' (Buller *et al.* 2014).

7. Discussion and conclusion

Important policy questions around linkages between IPV and women's income remain unanswered due to a lack of evidence and consensus on theories and mechanisms. With one in three women experiencing lifetime IPV globally, and one in three female homicides perpetrated by an intimate partner, it is essential to better understand how wealth and

economic development contribute to declines in prevalence (Stöckl *et al.* 2013; WHO 2013). Moreover, with cash transfer programs reaching approximately 750 million to 1 billion people in the developing world (DFID 2011), it is crucial that these programs understand how they may affect intrahousehold dynamics, including potential conflict, in both intended and unintended ways. The majority of current evidence linking poverty or wealth and IPV is from cross-sectional analysis and few studies are able to identify causal impacts.

This study uses a randomized design to investigate whether cash, vouchers and food transfers targeted to women in poor urban areas and intended to reduce poverty and food insecurity also impact IPV. We find that transfers decrease the probability that a woman experiences controlling behaviors, moderate physical violence, and any physical or sexual violence by 6 to 7 percentage points or approximately a 38 percent to 43 percent decrease from baseline means. These results are similar in magnitude to studies in Peru, Mexico and Kenya which find that CTs decreased physical IPV by 5 to 11 percentage points (Bobonis, Gonzalez-Brenes and Castro 2013; Haushofer and Shapiro 2013; Perova 2010). Unlike in Mexico where decreases in physical violence were accompanied by increases in threats of violence, we find no evidence that partners use violence to extract transfers forcefully. Instead, we find decreases in violence that are similar in magnitude across transfer modality. Results from our study provide promising evidence that transfers not only have the potential to decrease multiple forms of IPV in the short term, but also that cash – that is intended to reduce food insecurity – is just as effective as in-kind transfers in decreasing IPV.

We also find that initial conditions and power dynamics between partners is important in determining the magnitude and significance of impacts. In particular, we find that decreases in IPV are concentrated among woman with low sole or joint decision-making power at baseline. This is consistent with economic theories that predict that baseline bargaining power matters in determining the relationship between a woman's income and IPV. However, our findings are in contrast to heterogeneous effects found in Ecuador and Peru where impacts are stronger among women who are relatively advantaged in terms of proxy measures for empowerment (education, fewer children, and cash-paying jobs) (Hidrobo and Fernald 2013; Perova 2010). Yet, it is clear from the sensitivity analysis that included interactions for other proxy measures (education and employment in Appendix Table A3) that direct measures such as those used in this study and indirect indicators used in previous studies measure different factors. Taken together, the results from our analysis indicate that transfers in certain settings may work to equalize power dynamics in households with high levels of initial inequity.

Given that we find a decrease in IPV due to the transfer program, we investigate two possible theories that could explain this decrease. The first is related to household bargaining models where an increase in a woman's income leads to an increase in her

bargaining power within the household, and the second relates to stress theories where an increase in income reduces poverty-related conflict. We find suggestive evidence for both phenomena. In particular, we find changes in the intrahousehold allocation of goods towards more child-friendly goods, which suggests a change in the allocation of goods that are more in line with a woman's preferences. We also find that IPV decreases regardless of the gender of the recipient, which suggests a change in the overall well-being of the household. A companion mixed-method paper further supports both theories, showing that the program leads to improvements in women's empowerment and a decrease in tensions and stress within the household (Buller *et al.* 2014). Although we did not directly collect measures of stress, preliminary evidence from Kenya's GiveDirectly evaluation on stress suggest that this is a potential pathway through which some transfer programs may affect IPV.

While we find no evidence that transfers are extracted or lead to conflict within relationships, we cannot dismiss extraction or male backlash theories completely. The program's transfers were framed as part of a wider food security intervention and did not challenge traditional gender roles. Evidence from our mixed-method study supports findings that show that how the intervention is framed and labeled affects subsequent behavior (Benhassine *et al.* 2013; Buller *et al.* 2014). Consequently, transfers may not have led to extraction or conflict because they were perceived to be for the benefit of the entire household and household nutrition is typically thought of as being a domain traditionally controlled by women and mothers.

Our study's uniqueness must be taken into account when generalizing results to other contexts. First, the sample is a select population of urban poor living in Northern Ecuador, with a high percentage of Colombian-born nationals. Moreover, since households receiving the government social protection program, BDH, are excluded from the program, the demographics of the study sample exclude many households with young children. Second, the intervention and period of study was six months. The shortness of the intervention may have led beneficiaries to behave differently than they would have under a longer-term program. Unfortunately, we are limited in our ability to measure anything but short-term impacts of increases in income, although the short six-month intervention period minimizes the possibility that impacts are due to selection into marriage or marriage dissolution through divorce. Third, we only measure violence that is perpetrated by an intimate partner where the aggressor is male and the victim female. The contribution of violence by a female partner or by other household members is likely to vary by context and in some regions may result in very different findings and conclusions. Fourth, all transfer recipients participated in monthly nutrition education sessions, which may have had an empowering effect due to increased information and social networking with fellow recipients in their neighborhoods. Although we are not able to directly model the potential contribution of these nutrition sessions, our conclusions by modality would not be affected since all participants received identical exposure and information. Finally, as previously mentioned, the transfer was labeled and perceived by beneficiaries to be a

transfer intended to improve the nutrition and health of families, which is typically in the domain of females. A differently framed transfer such as a transfer tied to more male-dominated domains, may have very different impacts.

Although evaluations of CT programs are a promising starting place for research on IPV and female income, further experiments exploring dynamics with employment, microcredit and other economic empowerment programs are equally important. Impacts from employment and microcredit programs are likely to differ from those from CT programs, given that employment and microfinance may have additional psychological and time allocation effects (Heath 2012). In addition, there is need for evidence on medium- and long-term impacts of transfer programs, carefully accounting for changes in partnership dynamics, as evidence has shown that the relationship between IPV and income may reverse over time. Lastly, better data on conflict within the household, stress and bargaining power are needed in order to better understand the pathway through which transfers impact IPV.

When designing and implementing transfer programs, it should not be assumed that giving cash to women will *a priori* cause larger increases in intrahousehold violence, as compared to in-kind transfers. Indeed, evidence from this study as well as others indicates that, on average, IPV is likely to decrease as a result of a transfer. However, there is a lack of understanding on the theories and mechanisms surrounding IPV and income. Quantitative as well as qualitative work is needed to validate and triangulate findings and pathways through which receipt of transfers translate into changes in IPV.

Figure 1: Flow of participants and randomization

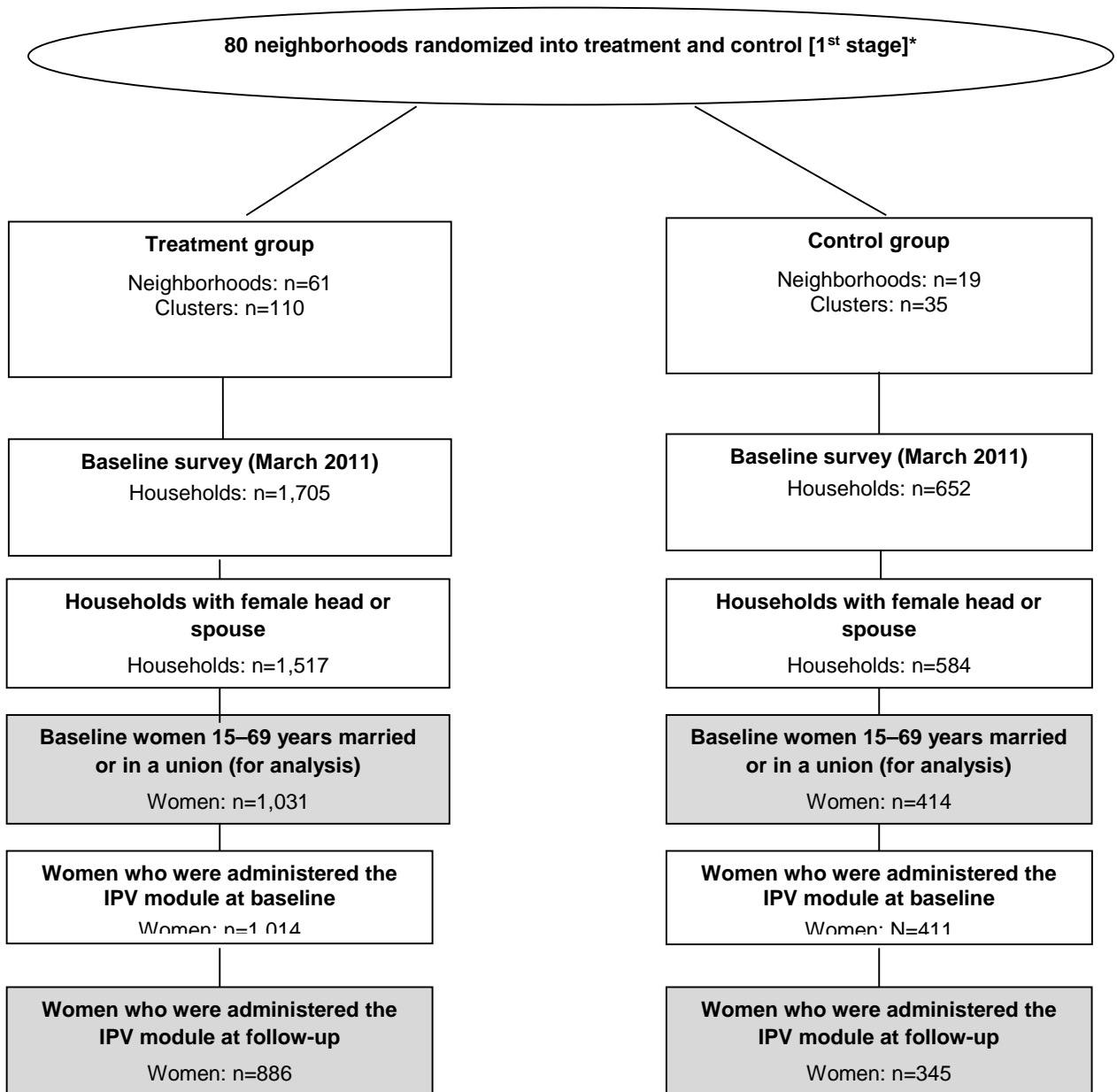


Table 1: Attrition analysis

	Means					P-value of difference			
	Control	Pooled	Food	Cash	Voucher	Control-pooled	Control-food	Control-cash	Control-voucher
Attrition rates	0.17	0.14	0.13	0.15	0.14	0.31	0.28	0.70	0.32
<i>N</i>	414	1,031	289	355	387				

Note: P-values are reported from Wald tests on the equality of means of control and different treatment arms. Pooled treatment refers to all three treatment arms. Standard errors are clustered at the cluster level.

Table 2: Attrition analysis by baseline characteristics

	Control			Treatment			Difference among attrited	
	Attrited (1)	In study (2)	P-value (3)	Attrited (4)	In study (5)	P-value (6)	Col(1)- Col(4) (7)	P-value (8)
<i>Female characteristics</i>								
Born in Colombia	0.59	0.39	0.00	0.47	0.34	0.01	0.13	0.15
Age	35.52	35.19	0.84	33.37	34.60	0.29	2.15	0.26
Some secondary education or higher	0.36	0.38	0.73	0.40	0.39	0.84	-0.04	0.64
Married	0.36	0.41	0.50	0.36	0.43	0.14	0.00	0.96
Indigenous	0.06	0.03	0.44	0.08	0.04	0.18	-0.02	0.63
Afro-Ecuadorian	0.07	0.06	0.78	0.03	0.07	0.04	0.04	0.33
Worked in the last 6 months	0.41	0.30	0.06	0.43	0.33	0.01	-0.02	0.74
High sole or joint decision making	0.51	0.51	0.98	0.50	0.44	0.24	0.01	0.88
<i>Partner characteristics</i>								
Some secondary education or higher	0.40	0.36	0.53	0.44	0.39	0.30	-0.04	0.64
Age	39.63	39.14	0.74	37.22	38.40	0.40	2.41	0.22
Worked in the last 6 months	0.95	0.96	0.85	0.92	0.96	0.06	0.04	0.30
<i>Household characteristics</i>								
Male household head	0.97	0.97	1.00	0.92	0.98	0.03	0.05	0.11
Household size	4.48	4.57	0.72	4.17	4.29	0.38	0.31	0.27
Number of children 0–5 years	0.67	0.72	0.64	0.66	0.76	0.14	0.00	0.97
Number of children 6–15 years	0.72	1.02	0.02	0.83	0.88	0.57	-0.10	0.43
Asset index	0.61	0.69	0.81	-0.25	0.34	0.00	0.86	0.03
Value of total monthly consumption per capita (USD)	111.85	107.83	0.67	109.30	109.02	0.97	2.56	0.83
<i>IPV indicators</i>								
Controlling behavior	0.21	0.17	0.52	0.25	0.17	0.05	-0.04	0.57
Emotional	0.35	0.25	0.06	0.30	0.27	0.41	0.04	0.51
Moderate physical	0.18	0.11	0.15	0.17	0.15	0.60	0.01	0.85
Severe physical	0.11	0.06	0.28	0.12	0.07	0.17	-0.01	0.81
Physical and/or sexual	0.21	0.13	0.15	0.20	0.18	0.45	0.01	0.88
Lifetime any violence	0.59	0.52	0.16	0.45	0.48	0.41	0.15	0.02

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the cluster level. High sole or joint decision making equals one if a woman has sole or joint decision making over all applicable domains. Lifetime any violence is an indicator that equals one if a women has experienced lifetime emotional, physical, or sexual violence.

Table 3: Baseline means by pooled treatment arm

	N	All	Control	Treatment	P-value of diff.
<i>Female characteristics</i>					
Born in Colombia	1,231	0.36	0.39	0.34	0.40
Age	1,231	34.77	35.19	34.60	0.46
Some secondary education or higher	1,231	0.39	0.38	0.39	0.86
Married	1,231	0.42	0.41	0.43	0.77
Indigenous	1,231	0.04	0.03	0.04	0.54
Afro-Ecuadorian	1,231	0.07	0.06	0.07	0.67
Worked in the last 6 months	1,231	0.32	0.30	0.33	0.49
High sole or joint decision making	1,229	0.46	0.51	0.44	0.16
<i>Partner characteristics</i>					
Some secondary education or higher	1,224	0.38	0.36	0.39	0.45
Age	1,224	38.61	39.14	38.40	0.37
Worked in the last 6 months	1,224	0.96	0.96	0.96	0.66
<i>Household characteristics</i>					
Male household head	1,231	0.98	0.97	0.98	0.51
Household size	1,231	4.37	4.57	4.29	0.02
Number of children 0–5 years	1,231	0.75	0.72	0.76	0.52
Number of children 6–15 years	1,231	0.92	1.02	0.88	0.06
Asset index	1,231	0.44	0.69	0.34	0.10
Value of total monthly consumption per capita (USD)	1,228	108.69	107.83	109.02	0.84
<i>IPV indicators</i>					
Controlling behavior	1,231	0.17	0.17	0.17	0.82
Emotional	1,231	0.26	0.25	0.27	0.43
Moderate physical	1,231	0.14	0.11	0.15	0.04
Severe physical	1,231	0.07	0.06	0.07	0.56
Physical and/or sexual	1,231	0.16	0.13	0.18	0.06
Lifetime any violence	1,231	0.49	0.52	0.48	0.25

Note: P-values are reported from Wald tests on the equality of means of Treatment and Control for each variable. Standard errors are clustered at the cluster level. High sole or joint decision making equals one if a woman has sole or joint decision making over all applicable domains. Lifetime any violence is an indicator that equals one if a women has experienced lifetime emotional, physical or sexual violence.

Table 4: Impact of pooled treatment on IPV measures

	Controlling		Emotional		Moderate physical		Severe physical		Physical or sexual	
Pooled treatment	-0.06 (0.03)**	-0.07 (0.03)**	-0.04 (0.03)	-0.04 (0.03)	-0.06 (0.02)**	-0.06 (0.02)**	-0.02 (0.02)	-0.02 (0.02)	-0.06 (0.03)**	-0.06 (0.03)**
Born in Colombia		-0.04 (0.03)		-0.02 (0.03)		-0.02 (0.02)		-0.02 (0.02)		-0.04 (0.02)*
Age		-0.00 (0.00)**		0.00 (0.00)		0.00 (0.00)		0.00 (0.00)		-0.00 (0.00)
Some secondary education or higher		-0.07 (0.03)**		-0.06 (0.03)*		0.00 (0.02)		-0.02 (0.02)		0.01 (0.03)
Married		-0.07 (0.03)**		-0.09 (0.03)**		-0.04 (0.02)		-0.02 (0.02)		-0.05 (0.02)**
Indigenous		0.04 (0.07)		-0.01 (0.07)		-0.08 (0.05)		-0.02 (0.04)		-0.01 (0.05)
Afro-Ecuadorian		-0.05 (0.06)		-0.03 (0.05)		0.00 (0.04)		0.02 (0.03)		0.01 (0.04)
Worked in the last 6 months		0.06 (0.03)**		0.02 (0.03)		-0.00 (0.02)		0.01 (0.02)		0.01 (0.02)
High sole or joint decision making		-0.02 (0.03)		-0.04 (0.02)		-0.02 (0.02)		-0.02 (0.02)		-0.02 (0.02)
Partner has some secondary education or higher		0.03 (0.03)		0.02 (0.03)		-0.01 (0.02)		-0.03 (0.02)*		-0.01 (0.02)
Partner's age		0.00 (0.00)		0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)		-0.00 (0.00)
Number of children 0–5 years in household		0.02 (0.02)		0.05 (0.02)**		-0.00 (0.01)		0.02 (0.01)*		0.00 (0.01)
Number of children 6–15 years in household		0.01 (0.01)		0.01 (0.01)		0.00 (0.01)		0.00 (0.01)		0.01 (0.01)
Wealth index: 2nd quartile		-0.00 (0.04)		-0.01 (0.04)		-0.06 (0.03)*		-0.03 (0.03)		-0.06 (0.03)*
Wealth index: 3rd quartile		0.05 (0.04)		-0.00 (0.04)		-0.03 (0.03)		-0.01 (0.03)		-0.02 (0.03)
Wealth index: 4th quartile		0.05 (0.04)		0.04 (0.04)		-0.05 (0.03)		-0.00 (0.03)		-0.02 (0.03)
Carchi	-0.06 (0.03)**	-0.05 (0.03)	-0.08 (0.03)**	-0.07 (0.03)**	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.00 (0.02)	0.00 (0.03)	0.01 (0.03)
Baseline controlling	0.30 (0.03)**	0.28 (0.03)**								
Baseline emotional			0.31 (0.03)**	0.30 (0.03)**						
Baseline moderate physical violence					0.22 (0.02)**	0.21 (0.02)**				
Baseline severe physical violence							0.21 (0.02)**	0.20 (0.02)**		
Baseline physical and/or sexual violence									0.26 (0.02)**	0.25 (0.02)**
N	1,231	1,224	1,231	1,224	1,231	1,224	1,231	1,224	1,231	1,224
Pseudo R2	0.06	0.09	0.09	0.11	0.11	0.12	0.11	0.13	0.12	0.13

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$.

Table 5: Impact of pooled treatment on individual IPV indicators

	Baseline mean	Basic	Extended controls
<i>Controlling behaviors</i>			
Accused you of being unfaithful	0.11	-0.04 (0.02)*	-0.04 (0.02)*
Tried to limit your contact with your family	0.11	-0.04 (0.02)**	-0.05 (0.02)**
Tried to limit your contact with friends	.	-0.03 (0.02)	-0.04 (0.02)
Wanted to know where you were at all times	.	-0.03 (0.03)	-0.03 (0.03)
<i>Emotional violence</i>			
Humiliated or insulted you	0.21	-0.06 (0.03)**	-0.06 (0.03)**
Threatened to leave you	0.14	-0.00 (0.02)	-0.01 (0.02)
Threatened to take away your children	0.07	0.01 (0.02)	0.00 (0.02)
Threatened to hurt you or someone you care about	.	-0.01 (0.01)	-0.01 (0.01)
Ignored you or was indifferent towards you	.	-0.05 (0.03)*	-0.05 (0.03)
Humiliated or insulted you in front of others	.	-0.03 (0.03)	-0.03 (0.02)
<i>Moderate physical</i>			
Pushed you or shook you or threw something at you	0.12	-0.04 (0.02)*	-0.04 (0.02)*
Slapped you or twisted your arm	0.08	-0.04 (0.02)**	-0.04 (0.02)**
<i>Severe physical</i>			
Hit you with his fist or something else that could hurt you	0.06	-0.02 (0.02)	-0.02 (0.02)
Kicked you or dragged you	0.04	-0.02 (0.02)	-0.02 (0.02)
Tried to choke or burn you	0.01	-0.02 (0.01)	-0.02 (0.01)
Attacked you with a gun, knife or other weapon	0.00	0.00 (0.01)	0.00 (0.01)
Threatened you with a gun, knife or other weapon	0.01	0.01 (0.01)	0.01 (0.01)
<i>Sexual violence</i>			
Physically forced you to have sexual intercourse	0.03	-0.02 (0.01)	-0.02 (0.01)
Forced you to do something sexual that you found degrading	0.02	0.00 (0.01)	0.00 (0.01)

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. Indicators with missing baseline means were not collected at baseline. Basic column controls for baseline outcome variable when available and controlled for province. Extended controls include controls for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable when available. They also contain province-fixed effects.

Table 6: Impact of treatment modalities on IPV measures

	Controlling	Emotional	Moderate physical	Severe physical	Physical or sexual
Food treatment	-0.06 (0.04)	-0.05 (0.04)	-0.06 (0.03)**	-0.02 (0.03)	-0.07 (0.04)**
Cash treatment	-0.08 (0.04)**	-0.05 (0.04)	-0.05 (0.03)*	-0.01 (0.03)	-0.05 (0.03)
Voucher treatment	-0.06 (0.03)*	-0.03 (0.04)	-0.05 (0.03)*	-0.03 (0.02)	-0.06 (0.03)*
<i>N</i>	1,224	1,224	1,224	1,224	1,224
Pseudo R2	0.09	0.12	0.12	0.13	0.13
P-value: Food=Voucher	0.97	0.52	0.75	0.86	0.60
P-value: Cash=Voucher	0.60	0.47	0.94	0.53	0.86
P-value: Food=Cash	0.65	0.97	0.69	0.67	0.51

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

Table 7: Differential impact with respect to baseline decision-making power

	Controlling	Emotional	Moderate physical	Severe physical	Physical or sexual
Pooled treatment	-0.11 (0.04)***	-0.07 (0.04)*	-0.10 (0.03)***	-0.05 (0.02)**	-0.11 (0.04)***
Pooled treatment X High sole or joint decision making	0.08 (0.06)	0.07 (0.05)	0.10 (0.04)***	0.08 (0.03)***	0.10 (0.04)**
High sole or joint decision making	-0.07 (0.05)	-0.09 (0.04)**	-0.09 (0.03)***	-0.08 (0.03)***	-0.10 (0.04)***
<i>N</i>	1,224	1,224	1,224	1,224	1,224
Pseudo R2	0.09	0.12	0.13	0.14	0.14
Treatment effect for women with high sole or joint decision making	-0.03 (0.04)	-0.00 (0.04)	0.00 (0.03)	0.03 (0.03)	-0.00 (0.03)

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

Table 8: Impact of transfers on clothing expenditures

A. Expenditures on child clothes and shoes	=1 if purchased		Log expenditures			Expenditure share		
Pooled treatment	0.06 (0.03)**	0.10 (0.04)**		0.19 (0.11)*	0.31 (0.14)**	0.03 (0.02)*	0.05 (0.02)**	
Pooled treatment X High sole or joint decision making		-0.07 (0.05)			-0.24 (0.18)		-0.05 (0.03)*	
Transfer recipient ==Male			0.03 (0.04)			0.11 (0.15)		0.01 (0.02)
Transfer recipient ==Female			0.09 (0.03)***			0.30 (0.12)**		0.04 (0.02)***
R^2	0.19	0.19	0.18					
N	1,218	1,218	1,031	1,218	1,218	1,031	1,211	1,211
P-value: Male=Female			0.07			0.11		0.09
B. Expenditures on female adult clothes and shoes	=1 if purchased		Log expenditures			Expenditure share		
Pooled treatment	0.05 (0.03)	0.07 (0.04)		0.16 (0.15)	0.26 (0.19)	0.01 (0.01)	0.02 (0.02)	
Pooled treatment X High sole or joint decision making		-0.04 (0.06)			-0.19 (0.23)		-0.03 (0.02)	
Transfer recipient ==Male			0.08 (0.05)*			0.31 (0.19)		0.02 (0.02)
Transfer recipient ==Female			0.03 (0.04)			0.07 (0.16)		0.00 (0.02)
R^2	0.04	0.04	0.04					
N	1,218	1,218	1,031	1,218	1,218	1,031	1,211	1,211
P-value: Male=Female			0.17			0.13		0.13
C. Expenditures on male adult clothes and shoes	=1 if purchased		Log expenditures			Expenditure share		
Pooled Treatment	0.01 (0.04)	-0.01 (0.05)		0.00 (0.21)	-0.07 (0.28)	-0.00 (0.02)	-0.00 (0.03)	
Pooled Treatment X High sole or joint decision making		0.03 (0.06)			0.14 (0.34)		0.00 (0.03)	
Transfer recipient ==Male			0.05 (0.05)			0.26 (0.26)		0.04 (0.03)
Transfer recipient ==Female			0.00 (0.04)			-0.06 (0.22)		-0.01 (0.02)
R^2	0.03	0.03	0.04					
N	1,218	1,218	1,031	1,218	1,218	1,031	1,211	1,211
P-value: Male=Female			0.28			0.11		0.04

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects. Tobit regressions are used to estimate impacts for log expenditures and expenditure shares. Expenditure share is the expenditures on clothes divided by the total value of non-food expenditures.

Table 9: Impact of transfers on IPV, by gender of recipient

	Controlling	Emotional	Moderate physical	Severe physical	Physical or sexual
Pooled treatment (recipient male)	-0.10 (0.04)**	-0.10 (0.04)**	-0.07 (0.03)**	-0.04 (0.03)	-0.10 (0.04)***
Pooled treatment (recipient female)	-0.08 (0.03)**	-0.04 (0.03)	-0.06 (0.03)**	-0.02 (0.02)	-0.06 (0.03)**
<i>N</i>	1,037	1,037	1,037	1,037	1,037
Pseudo R2	0.08	0.12	0.12	0.13	0.14
P-value: Male=Female	0.55	0.14	0.63	0.35	0.17

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

Appendix

Table A1: Intimate partner violence questions

Cuando dos personas se casan o viven juntas, ellos usualmente comparten los buenos y los malos momentos.		1 = Sí 2 = No, >> siguiente pregunta	¿En los últimos 6 meses? 1 = Sí 2 = No	Su esposo (compañero) alguna vez:		1 = Sí 2 = No, >> siguiente pregunta	En los últimos 6 meses? 1 = Sí 2 = No
		A	B			A	B
T10	Le acusó de serle infiel? (<i>Controlling behaviors</i>)			T28	Le humilló o insultó en frente de otras personas? (<i>Emotional violence</i>)		
T11	Trató de limitar sus contactos con su familia con el objeto de hacerla sentir mal? (<i>Controlling behaviors</i>)			T19	La trató de estrangularla o quemarla? (<i>Severe physical violence</i>)		
T12	La humilló o insultó en términos como “no sirves para nada,” “nunca haces nada,” o “eres una bruta.” (<i>Emotional violence</i>)			T20	La atacó/agredió con un cuchillo, pistola u otro tipo de arma? (<i>Severe physical violence</i>)		
T13	La amenazó con abandonarla? (<i>Emotional violence</i>)			T21	La amenazó con un cuchillo, pistola u otro tipo de arma? (<i>Severe physical violence</i>)		
T14	La amenazó con quitarle a sus hijos? (<i>Emotional violence</i>)			T22	Ha utilizado la fuerza física para obligarla a tener relaciones sexuales aunque usted no quería? (<i>Sexual violence</i>)		
T24	La amenazó con hacerle daño a usted o a alguien que sea importante para usted? (<i>Emotional violence</i>)			T23	La obligó a realizar actos sexuales que usted no aprueba? (<i>Sexual violence</i>)		
T25	Trató de limitar sus contactos con amigos(as)? (<i>Controlling behaviors</i>)			T15	La empuja, sacude o le tira algo? (<i>Moderate physical violence</i>)		
T26	Quiso saber en donde está en todo momento? (<i>Controlling behaviors</i>)			T16	La abofeteó o le retorció el brazo? (<i>Moderate physical violence</i>)		
T27	Le ignoró o fue indiferente con usted? (<i>Emotional violence</i>)			T17	La golpeó con el puño o con algo que pudo hacerle daño? (<i>Severe physical violence</i>)		
				T18	La ha pateado o arrastrado? (<i>Severe physical violence</i>)		

Table A2: Baseline means by intervention arms

	N	Means				P-value of diff.					
		Control	Food	Cash	Voucher	Food - control	Cash - control	Voucher -control	Food - cash	Food - voucher	Cash - voucher
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Female characteristics</i>											
Born in Colombia	1,231	0.39	0.32	0.37	0.33	0.35	0.76	0.36	0.46	0.87	0.47
Age	1,231	35.19	34.08	34.91	34.72	0.32	0.79	0.66	0.50	0.62	0.88
Some secondary education or higher	1,231	0.38	0.35	0.39	0.42	0.61	0.94	0.45	0.57	0.22	0.52
Married	1,231	0.41	0.43	0.41	0.43	0.75	0.98	0.73	0.74	0.98	0.72
Indigenous	1,231	0.03	0.04	0.05	0.04	0.95	0.40	0.69	0.46	0.74	0.69
Afro-Ecuadorian	1,231	0.06	0.03	0.10	0.07	0.18	0.18	0.70	0.01	0.13	0.39
Worked in the last 6 months	1,231	0.30	0.33	0.34	0.31	0.47	0.43	0.86	0.94	0.61	0.56
High sole or joint decision making	1,229	0.51	0.47	0.46	0.41	0.46	0.35	0.06	0.86	0.22	0.26
<i>Partner characteristics</i>											
Some secondary education or higher	1,224	0.36	0.39	0.39	0.40	0.60	0.62	0.42	0.97	0.82	0.78
Age	1,224	39.14	37.66	38.11	39.21	0.24	0.30	0.95	0.73	0.25	0.32
Worked in the last 6 months	1,224	0.96	0.96	0.97	0.97	0.84	0.50	0.59	0.41	0.46	0.84
<i>Household characteristics</i>											
Male household head	1,231	0.97	0.96	0.98	0.98	0.66	0.29	0.30	0.21	0.20	0.90
Household size	1,231	4.57	4.36	4.36	4.19	0.21	0.14	0.00	0.97	0.32	0.21
Number of children 0–5 years	1,231	0.72	0.81	0.72	0.75	0.25	0.98	0.72	0.28	0.44	0.74
Number of children 6–15 years	1,231	1.02	0.86	0.92	0.85	0.18	0.34	0.05	0.60	0.93	0.42
Asset index	1,231	0.69	0.31	0.22	0.49	0.21	0.05	0.35	0.75	0.50	0.16
Value of total monthly consumption per capita (USD)	1,228	107.83	110.35	108.83	108.18	0.79	0.89	0.96	0.87	0.81	0.91
<i>IPV indicators</i>											
Controlling behavior	1,231	0.17	0.17	0.15	0.18	0.98	0.50	0.92	0.48	0.94	0.41
Emotional	1,231	0.25	0.27	0.24	0.29	0.60	0.93	0.23	0.58	0.61	0.26
Moderate physical	1,231	0.11	0.15	0.15	0.16	0.12	0.19	0.06	0.80	0.82	0.62
Severe physical	1,231	0.06	0.05	0.07	0.10	0.43	0.90	0.12	0.38	0.02	0.17
Physical and/or sexual	1,231	0.13	0.17	0.16	0.19	0.20	0.26	0.04	0.83	0.54	0.39
Lifetime any violence	1,231	0.52	0.49	0.46	0.49	0.49	0.17	0.50	0.52	0.96	0.48

Note: Columns 2–5 report baseline means by intervention arm for women in the study analysis. Columns 6–11 report p-values from tests on the equality of means for each variable. Standard errors are clustered at the cluster level. High sole or joint decision making equals one if a woman has sole or joint decision making over all applicable domains. Lifetime any violence is an indicator that equals one if a women has experienced lifetime emotional, physical, or sexual violence.

Table A3: Differential impact with respect to baseline decision-making power, controlling for confounding factors

	Controlling	Emotional	Moderate physical	Severe physical	Physical or sexual
Pooled treatment	-0.11 (0.05)**	-0.07 (0.05)	-0.07 (0.03)**	-0.03 (0.03)	-0.07 (0.04)*
Pooled treatment X High sole or joint decision making	0.08 (0.06)	0.07 (0.05)	0.09 (0.04)**	0.08 (0.03)**	0.08 (0.04)*
High sole or joint decision making	-0.07 (0.05)	-0.08 (0.04)*	-0.08 (0.03)**	-0.08 (0.03)***	-0.08 (0.04)**
Pooled treatment X Some secondary education or higher	0.08 (0.07)	0.08 (0.08)	0.06 (0.04)	0.06 (0.04)	0.07 (0.05)
Some secondary education or higher	-0.13 (0.06)**	-0.12 (0.07)*	-0.04 (0.04)	-0.07 (0.04)*	-0.04 (0.04)
Pooled treatment X Worked in the last 6 months	-0.09 (0.06)	-0.09 (0.05)*	-0.01 (0.04)	-0.09 (0.03)**	-0.05 (0.04)
Worked in the last 6 months	0.12 (0.06)**	0.09 (0.04)**	0.01 (0.04)	0.07 (0.03)**	0.05 (0.04)
Pooled treatment X Carchi	0.00 (0.07)	-0.02 (0.07)	-0.09 (0.05)*	-0.03 (0.04)	-0.11 (0.06)*
Carchi	-0.05 (0.07)	-0.05 (0.07)	0.07 (0.05)	0.02 (0.04)	0.08 (0.06)
<i>N</i>	1,224	1,224	1,224	1,224	1,224
Pseudo R2	0.09	0.12	0.14	0.15	0.15

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0-5, number of children 6-15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

Table A4: Lee bounds, pooled treatment

	Controlling			Emotional			Moderate physical			Severe physical			Physical or sexual		
	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower
Pooled treatment	-0.07 (0.03)**	-0.06 (0.03)*	-0.09 (0.03)***	-0.04 (0.03)	-0.03 (0.03)	-0.06 (0.03)*	-0.06 (0.02)**	-0.05 (0.02)**	-0.07 (0.02)***	-0.02 (0.02)	-0.02 (0.02)	-0.04 (0.02)**	-0.06 (0.03)**	-0.06 (0.03)*	-0.08 (0.03)***
N	1,224	1,197	1,196	1,224	1,199	1,197	1,224	1,197	1,196	1,224	1,200	1,196	1,224	1,198	1,197
Pseudo R2	0.09	0.08	0.09	0.11	0.12	0.11	0.12	0.12	0.11	0.13	0.13	0.14	0.13	0.13	0.14
Baseline Mean	0.17	0.17	0.17	0.26	0.26	0.25	0.14	0.14	0.13	0.07	0.07	0.06	0.16	0.16	0.16

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0–5, number of children 6–15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

Table A5: Lee bounds, by treatment arm

	Controlling			Emotional			Moderate physical			Severe physical			Physical or sexual		
	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower	Beta	Upper	Lower
Food treatment	-0.06 (0.04)	-0.04 (0.05)	-0.09 (0.04)**	-0.05 (0.04)	-0.05 (0.04)	-0.08 (0.04)**	-0.06 (0.03)**	-0.06 (0.03)*	-0.10 (0.03)***	-0.02 (0.03)	-0.02 (0.03)	-0.07 (0.02)***	-0.07 (0.04)**	-0.07 (0.04)*	-0.13 (0.04)***
Cash treatment	-0.08 (0.04)**	-0.08 (0.04)**	-0.09 (0.04)**	-0.05 (0.04)	-0.05 (0.04)	-0.06 (0.04)	-0.05 (0.03)*	-0.05 (0.03)*	-0.05 (0.02)**	-0.01 (0.03)	-0.01 (0.03)	-0.02 (0.02)	-0.05 (0.03)	-0.05 (0.03)	-0.06 (0.03)*
Voucher treatment	-0.06 (0.03)*	-0.05 (0.03)	-0.07 (0.03)**	-0.03 (0.04)	-0.01 (0.04)	-0.05 (0.04)	-0.05 (0.03)*	-0.05 (0.03)*	-0.07 (0.03)***	-0.03 (0.02)	-0.02 (0.03)	-0.05 (0.02)**	-0.06 (0.03)*	-0.05 (0.03)*	-0.07 (0.03)**
N	1,224	1,199	1,201	1,224	1,199	1,197	1,224	1,195	1,200	1,224	1,200	1,195	1,224	1,196	1,197
P-value: Food=Voucher	0.97	0.85	0.77	0.52	0.45	0.38	0.75	0.75	0.26	0.86	0.84	0.51	0.60	0.65	0.13
P-value: Cash=Voucher	0.60	0.49	0.66	0.47	0.35	0.81	0.94	0.91	0.40	0.53	0.60	0.12	0.86	0.94	0.59
P-value: Food=Cash	0.65	0.47	0.94	0.97	0.97	0.52	0.69	0.81	0.05	0.67	0.77	0.04	0.51	0.61	0.04

Note: Standard errors in parenthesis clustered at the cluster level. * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. All estimations control for: women characteristics (age, education, ethnicity, race, marital status, employment status, decision-making power); partner characteristics (age and education); household characteristics (number of children 0-5, number of children 6-15, wealth quartiles); and baseline outcome variable. They also contain province-fixed effects.

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