(Un)Conditional Love in the Time of Conditional Cash Transfers: The Effect of the Peruvian JUNTOS Program on Spousal Abuse

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Abstract

Cash Transfer programs often target women as the recipient of the money. Unintentionally, this flow of unearned income may reduce spousal abuse. We investigate this possibility by assessing the Peruvian JUNTOS program. We exploit the staggered timing in the rollout of the program across municipalities along with its eligibility rule for determining participation to perform a difference-in-differences analysis. Using data from the Demographic and Health Surveys, we find that JUNTOS reduced the prevalence of physical intimate partner violence by 25-30 percent. Further analysis indicates that reductions in frequent alcohol consumption and alcohol-related aggression from male partners are behind this result.

JEL Codes: D13, I15, J12, J16, J18, O12

Keywords: Gender, Intimate Partner Violence, Conditional Cash Transfer Programs

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1 Introduction

Intimate partner violence (henceforth IPV) is the most common form of violence against women. The World Health Organization (WHO) defines it as "any behavior within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship" (WHO 2013). IPV is both a cause and a consequence of gender inequality and constitutes an obstacle to eradicate gender-based discrimination and to achieve sustainable development goals.

Recent estimates reveal that nearly 30 percent of women worldwide experience some form of physical or sexual IPV in their lifetime (Devries et al. 2013). This figure can be as high as 66 percent in Central Sub-Saharan Africa and 41 percent in Andean Latin America. Women victims of IPV suffer physical and psychological damages affecting not only them but also their children, which encompass a serious health problem (ICRW 2009; Garcia-Moreno and Watts 2011). These damages translate into economic losses for society, including reparation costs, medical treatment, and lost productivity. IPV represents nearly 3.3 percent of lost GDP for the United States, with costs levying disproportionately in low- and middle-income settings (CDC 2003; WHO 2005). In developing countries, these costs vary between 1.5 and 4 percent of GDP.[1]

Gender violence and IPV, in particular, arise from gender disparities at structural, societal, community, and family levels. These disparities relate to patriarchal social norms and lower status of women in societies, low levels of women's empowerment, lack of family, social and legal support for women, and poverty. Despite its harmful effects on women's well-being, as well as on the health and financial burden imposed upon society, there is still limited evidence about what interventions are effective in reducing IPV, particularly in developing countries. Recent studies provide quantitative evidence

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[1]See Morrison and Orlando (1999) for Chile and Nicaragua and Ribero and Sanchez (2005) for Colombia. These costs are mostly related to lost productivity (as defined by reductions in earnings or forgone labor income) that arises after instances of abuse experienced by women. There is also evidence of other unobserved impacts not usually taken in consideration when calculating the costs of IPV, such as health problems that women victims of IPV and their children experience over time (Morrison and Orlando 2005).

on interventions with the potential to affect the risk of IPV, including social interventions such a participatory learning, community mobilization and transformation of gender norms, and economic interventions such as microfinance and cash transfers programs (Bourey et al. 2015; Garcia-Moreno et al. 2015).

A growing body of empirical studies suggests that cash transfers (CT) programs can be effective in reducing the prevalence of IPV (Buller et al. 2018). CT programs are social protection programs or safety nets that provide poor families with cash, often given to women, to mitigate current poverty. Some of these programs are conditional (CCT), as they require beneficiaries to comply with specific behaviors, while others are unconditional (UCT).

Although these programs do not explicitly aim at affecting IPV, they have the potential to do it as they could change intra-household dynamics and thereby, the behaviors of those in the relationship. Given that CT programs are currently globally widespread, understanding the mechanisms through which they can affect IPV is relevant as this could help improving policies to revert and prevent IPV around the world. In particular, Buller et al. (2018) comprehensively review the existing literature and establish three pathways through which CT programs could affect IPV: household economic security and emotional well-being; intra-household conflict; and women's empowerment.[2] The first pathway leads to a lower prevalence of IPV, while the second and third could lead to either a lower or a higher prevalence of IPV. However, there are multiple mechanisms at play and some of them could offset others (Hidrobo and Fernald 2013; Roy et al. 2019).

Through the first pathway, CT programs increase household economic security by reducing poverty, increasing financial and food security, increasing savings, assets and investments, and improving households' coping strategies. This improves emotional well-being by reducing poverty-related stress and improving mental health as implied by the "family stress model" (Conger et al. 1990), which leads to reductions in IPV,

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[2]The studies in the review assess CT programs from Africa (Lesotho, Kenya, South Africa, and Uganda), Asia (Bangladesh and Turkey) and Latin America (Brazil, Colombia, Ecuador, Mexico, Nicaragua, Peru, and Uruguay).

consistent with the hypothesis of the expressive use of violence (Eswaran and Malhotra 2011). Besides, improvements in emotional well-being could reduce men's substance abuse, such as heavy alcohol drinking, which may also lead to reductions in IPV (Angelucci 2008).

Through the second pathway, CT programs increase the availability of cash required to meet daily needs that leads to a decline in the conflict between women and their partners. This, in turn, leads to reductions in IPV. However, CT programs could also increase the availability of cash for purchasing temptation goods such as alcohol and tobacco. This may increase conflict and lead to increases in IPV as men could use violence to extract money from their wives, consistent with the hypothesis of the extractive use of violence (Bloch and Rao 2002; Bobonis et al. 2013).

Through the third pathway, CT programs increase women's empowerment by increasing their direct access to cash, information (through training) and social networks (through group activities), enhancing women's self-confidence and self-efficacy, and increasing their financial autonomy and productive investments. These changes, in turn, improve women's bargaining power within the relationship, their ability to negotiate their preferences, and their ability to separate or to threaten to separate from their partners credibly. When the partners' reaction is accepting, wishing to keep women in the relationship and increasing their appreciation of the women's worth, this could lead to reductions in IPV as bargaining models of the household predict (Tauchen et al. 1991; Farmer and Tiefenthaler 1997). By contrast, when the partners feel threats to their authority and identity as the family "providers," this could trigger a "male backlash" (Faludi 1992). This increases IPV as men could use violence to reassert their status and authority within the relationship, consistent with the hypothesis of the instrumental use of violence (Anderberg and Rainer 2013).

In this paper, we explore the effects of the Peruvian CCT program, JUNTOS, on physical IPV. Launched late in the year 2005 and still running, JUNTOS targets poor households in rural areas of the country. Our focus in rural Peru is relevant as the prevalence rates of lifetime and recent physical IPV observed there, of 61 and 25

percent respectively, were among the highest around the world at the time preceding the start of the program (Garcia-Moreno et al. 2006).

We estimate the intention-to-treat effect of JUNTOS on physical IPV in a difference-in-differences design, by exploiting the temporal variation in the geographical expansion of the program together with the cross-sectional variation of its eligibility rule for determining participation. In doing so, we use rich, individual-level data from the Peruvian Demographic and Health Surveys over the period 2005-2015. We provide several novel features relative to previous empirical studies analyzing the effect of JUNTOS on IPV (Perova 2010; Ritter 2014).

The first appeal of our study is that we can construct our treatment and comparison groups by utilizing the program's algorithm for determining eligibility based on observable household characteristics. This constitutes an empirical advantage over past studies as it allows us to identify program eligibility without relying on alternative measures that do not necessarily define program participation, such as welfare indexes. Furthermore, this enables us to assess the extent of program spillover effects as we can explore how the prevalence of physical IPV changed over time among ex-ante non-eligible women.

Econometrically, our empirical approach has several advantages. First, our ability to classify women according to their eligibility condition and exposure to JUNTOS allows us to have two comparison groups: non-eligible women who live in municipalities that are already covered by the program and eligible women who live in municipalities that are not yet covered by it. Under certain conditions that we can demonstrate, the inclusion of non-eligible women as a comparison group allows us to purge time-varying, local factors that may introduce heterogeneity in the evolution of physical IPV across municipalities. Second, the time extension of our data allows us to include local linear trends in our regressions. Thus, we can adjust for potentially unobserved local determinants that may explain secular changes in physical IPV unrelated to the program. Third, our research design allows us to provide transparent, graphical depictions of trajectories in physical IPV over time and across the distribution of the

poverty score used for determining program eligibility.

Lastly, our study provides additional insights over past empirical work in terms of potential channels mediating our results. Specifically, we can analyze a comprehensive range of pathways through which CCT programs can impact physical IPV. This analysis is important for determining how public transfer programs targeting women can unintendedly alter household dynamics and thereby affect undesired social outcomes such as physical IPV.

We find a sizable and persistent decline in the prevalence of physical IPV after the introduction of JUNTOS. The probability of experiencing physical IPV declined by 25-30 percent following JUNTOS deployment, and this effect persists over time, even five years after the phase-in of the program. We also find that drops in moderate but not severe physical IPV are behind this decline: the probability of experiencing moderate physical IPV declined by nearly 30 percent following JUNTOS deployment.

In a thorough analysis of potential mechanisms, we do not find evidence that changes in women's empowerment nor in male partners' responses towards women's empowerment mediate our results. Instead, we find a decrease in alcohol consumption and alcohol-related aggression from male partners after the introduction of JUNTOS. We link our findings to those reported by previous empirical studies showing improvements in household economic security and reductions in poverty-related stress as the likely pathways to declines in IPV observed after the introduction of CT programs (Buller et al. 2018).

The paper proceeds as follows. In section 2, we briefly describe the JUNTOS program. In section 3, we describe our data and the construction of our outcome variables. In section 4, we describe our methodology for estimating the intention-to-treat effect of JUNTOS on physical IPV. In section 5, we present our main empirical results and robustness analysis. In section 6, we explore the potential channels of impact that may explain our results. In section 7, we present our conclusions.

2   The Peruvian JUNTOS Program

On April 2005 the Peruvian Government created the CCT program JUNTOS and launched its field deployment in September of that year.[3] JUNTOS integrates two broad objectives: reducing current poverty by providing households with cash transfers and breaking the inter-generational transmission of poverty by promoting the accumulation of human capital on education and health.

JUNTOS targets poor rural households with children under age five, school-age children, or pregnant women. The program is means-tested and selects its beneficiaries in three stages: first, it selects eligible municipalities, then it selects eligible households, and finally, it performs a community validation to minimize inclusion/exclusion errors.

To select eligible municipalities, JUNTOS used a score that aggregates indicators of lack of access to public services, income poverty, child malnutrition rates, and exposure to terrorist violence during the eighties and nineties. The score served to rank municipalities from those with greater to those with lower needs. The deployment of the program was staggered in stages over time and began in municipalities with higher scores. Still, the rollout did not strictly follow the order from the score (see Vakis and Perova 2009). JUNTOS began its field deployment in the last quarter of 2005 in 70 rural municipalities. Between 2006 and 2008 the program reached the poorest 637 municipalities in the country. By 2011, JUNTOS reached 880 municipalities, and subsequently, by 2016, the program reached 1,300 municipalities.

To select eligible households within an eligible municipality, JUNTOS uses a poverty score. Household-level data utilized to compute the poverty score come from a census in each municipality. Families with children or pregnant women and a poverty score above a cutoff value are eligible for program participation. In Appendix A, we describe the algorithm to compute the poverty score used by JUNTOS.[4]

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[3]Between 2005 and 2011 JUNTOS operated as an independent administrative unit of the Government. In 2012, the newly created Ministry of Development and Social Inclusion (MIDIS) absorbed all social protection programs in the country, including JUNTOS.

[4]The poverty score was initially calculated by using an algorithm created by the program's administration. In 2012, when MIDIS absorbed all social protection programs, a new poverty score named *Índice de Focalización de Hogares* (IFH) was established.

For a household selected as a program beneficiary, the female household head signs the program's agreement form and chooses the health facility where she will attend to get the medical examinations (if pregnant or nursing) or take her children for their growth controls. Local units from JUNTOS verify bimonthly the compliance with program conditions according to the program's guidelines. Disaffiliation from the program occurs when noncompliance with program conditions is frequent, when the household no longer has a member belonging to the program's target population, or when the household no longer meets the socio-economic conditions for being eligible according to the poverty score. Disaffiliation could also be voluntary.[5]

Beneficiary households receive a lump-sum payment irrespective of the household size or its children's age-gender composition. The program delivers the payment to the children's mother or the pregnant woman. Originally the transfer schedule was a monthly lump-sum payment of PER\$ 100 (roughly US\$ 35); however, in 2010 the transfer schedule changed so that beneficiaries currently receive PER\$ 200 bimonthly. Beneficiary households must meet the following conditions: (i) children ages 6-14 (also including children ages 15-18 since 2011) must attend school at least 85 percent of schooldays; (ii) children ages 0-5 must visit healthcare centers for growth check-ups; (iii) pregnant women must visit healthcare centers for antenatal care; and (iv) nursing women must visit healthcare centers for postnatal care.

It is worth mentioning that JUNTOS does not focus on IPV nor on any form of violence against women. Program conditions do not include behaviors related to IPV, and there are no educational talks nor other types of program components aiming at preventing IPV.

From 2012 onward, the IFH algorithm is common to all social protection programs in the country.

[5]The agreement is valid for three years. After these three years, JUNTOS performs a new socio-economic evaluation. The household is entitled to the benefit stipend during the duration of the agreement regardless of a change in their eligibility condition (for a detailed explanation, see Silva-Huerta and Stampini 2018).

3 Data and Measures

3.1 Data Sources

We use data from the Peruvian Demographic and Health Surveys (DHS) from the years 2000-2015. The National Bureau of Statistics (INEI for its Spanish acronym) implements the Peruvian DHS on an annual basis since the year 2004 (every four years before 2004). The DHS is nationally representative, publicly available, and collects information on a range of health outcomes and socio-demographic characteristics of women of reproductive age (15-49 years).

Three characteristics of the DHS make it suitable for our study. First, since the year 2000, the DHS includes a module on violence against women that provides information on women's experience of IPV. Second, the annual frequency of the DHS since the year 2004 allows us to observe the evolution of the prevalence of IPV before and after the rollout of JUNTOS. Third, since the year 2005, the DHS records information on spousal violence occurring during the twelve months before the survey date, allowing us to assess current instances of IPV.[6]

The DHS module on violence against women consists of a shortened and modified version of the Conflict Tactics Scales (CTS) elaborated by Straus (1979, 1990). The DHS randomly selects one woman per household to respond to the module, provided that she has ever been in a relationship. The module records information on past and recent events of spousal abuse and controlling behaviors exerted by the woman's partner. In short, this module enquires women whether in their current (if married/cohabiting) or most recent relationship (if divorced/separated/widowed) their partner ever perpetrated a series of behaviorally specific acts, including physical, sexual, and emotional/psychological abuse.[7]

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[6]Before 2005, the questions about IPV refer to cases of violence that occurred over the woman's lifetime (whether the woman has ever experienced IPV) and do not ask separately about past and current instances of IPV.

[7]The DHS protocol for the application of the module on violence against women intends to maximize the respondent's safety as well as the confidentiality of the interview. In particular, the protocol dictates to stop the interview in case there is no privacy between the surveyor and the woman. These requirements aim at reducing information

We construct our empirical sample using repeated annual cross-sections from the DHS over the period 2005-2015. We restrict the sample to include observations from rural municipalities where JUNTOS was deployed between 2005 and 2012. For several municipalities, we only have observations from a single year of our period of study. However, since the deployment of JUNTOS across municipalities occurred at different times, for the vast majority of municipalities in our empirical sample, we have observations from before and after the program phase-in. We use DHS data from the years 2000 and 2004 in our complementary robustness analysis.

We combine information from the DHS with administrative records from JUNTOS on municipality paydays. We use these administrative records to establish the month and year when JUNTOS reached a given municipality. In particular, for each municipality, we calculate the earliest day when a payment (cash transfer) occurs to determine the date of JUNTOS deployment in that municipality.

3.2   Outcomes

In our empirical analysis, we focus primarily on physical IPV. We concentrate on physical IPV because of the objective nature in the phrasing of the questions on physical violence, which ask about behavior-specific acts perpetrated by the male partner. Questions on sexual and emotional/psychological violence, on the contrary, add a degree of subjectivity, making their measurement and interpretation more difficult (Ellsberg and Heise 2005; Heise 2013).[8]

Physical IPV takes place if "[the] woman has been slapped, or had something thrown at her; pushed, shoved, or had her hair pulled; hit with a fist or something else

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disclosure and, because of this, nonresponse rates are low (less than 2 percent of women refuse to respond to the module).

[8]For instance, the questions on sexual IPV are worded as if the woman has been "forced to perform sexual acts [she does] not approve," and the questions on emotional/psychological IPV are worded as if the woman has been "insulted/humiliated." This wording can be subtle to individual interpretation because of three reasons: (i) by not asking the woman whether her partner committed a specific behavior/act; (ii) by making the woman recognize a specific behavior as violent to report it; and (iii) by adding terms whose interpretation may vary across different contexts (Kishor and Johnson 2004; MacQuarrie et al. 2014).

that could hurt; choked or burnt; threatened with or had a weapon used against her"
(WHO 2013). Based on this definition and the information provided by the DHS about
physically violent acts committed by the male partner, we define our principal outcome
as an indicator for physical IPV that takes the value of 1 if the woman reported that
during the past twelve months her partner perpetrated any of the following acts: (i)
pushed, shook, or threw something at her; (ii) slapped her or twisted her arm; (iii)
punched her with his fist or hit her with something that could hurt her; (iv) kicked her
or dragged her; (v) tried to choke or burn her; (vi) threatened her with a knife or other
weapon; or (vii) attacked her with a knife or other weapon.[9]

In a complementary analysis, we focus on other forms of IPV. We construct two
additional indicators that measure the occurrence of sexual and emotional/psychological
violent acts. Our outcome for sexual IPV is an indicator that takes the value of 1 if the
woman reported that during the past twelve months her partner committed any of the
following acts: (i) physically forced her to have sexual intercourse with him even when
she did not want to; or (ii) forced her to perform any sexual act that she did not
approve. Our outcome for emotional/psychological IPV is an indicator that takes the
value of 1 if the woman reported that during the past twelve months her partner
committed any of the following acts: (i) said or did something to humiliate her in front
of others; (ii) threatened to hurt or harm her or someone she cares about; or (iii)
threatened to leave the home, take away her children, or take away economic/financial
aid.

3.3 Treatment Indicators

We define a woman's treatment status by using a combination of eligibility for program
participation and exposure to the program. In our empirical analysis, eligibility for
program participation corresponds to the cross-sectional dimension, whereas exposure
to the program corresponds to the temporal dimension. A woman is treated if she

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[9]We further delve on the characteristics of the abuse and analyze the effects of JUN-
TOS on different measures of the severity of physical IPV. We present the results from
this analysis in Appendix E.

simultaneously is eligible for program participation and is exposed to the program.

We determine the eligibility for program participation by replicating the program's algorithm for defining poverty, using household characteristics recorded by the DHS.[10] Since the algorithm changed in the year 2012, we separately compute the poverty scores used in the periods 2005-2011 and 2012-2015 and assign to each household the poverty score that corresponds to its survey year.[11] A woman is eligible for program participation if the poverty score is above a cutoff value defined by JUNTOS/MIDIS. To simplify the analysis, we rescale the poverty score using the eligibility cutoff value so that positive values indicate that a woman is eligible for program participation and negative values indicate that a woman is non-eligible for program participation.

We determine the exposure to the program by using the information on the date when JUNTOS was deployed in a given municipality and the information on the DHS survey date. A woman is exposed to the program if she was surveyed after the date when JUNTOS arrived in the municipality.

We provide additional details on the construction of the poverty score and the indicator for JUNTOS's eligibility as well as the deployment of JUNTOS across municipalities over time in Appendix A.

3.4   Sample Selection

In our analysis, we focus on women currently married or cohabiting with a male partner.[12] In particular, our empirical sample includes women who live in rural areas,

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[10]The set of household characteristics includes: (i) percentage of illiterate women in the household; (ii) percentage of children attending school; (iii) access to industrial sources of fuel; (iv) number of appliances; (v) access to public services; and (vi) type of materials used in floors, walls, and ceiling.

[11]Similar variables are used for calculating both scores. The IFH, however, assigns different weights to the household characteristics as well as different cutoff values linked to geographical areas to determine eligibility for program participation.

[12]In our dataset, 85 percent of women are currently married or cohabiting and 96 percent of these women report living with their partners in the same dwelling. Our results remain invariant when we include in our sample *ever* married women (married, cohabiting, separated, divorced, and widowed women) instead of women who are currently in a relationship. The reason for that is that separation/divorce rates are very low in rural settings: every year, around 7 percent of women who responded the DHS module

who are the female household heads, who belong to the target population of JUNTOS (pregnant women or women who have at least one child age 14 or younger), who are currently married or cohabiting and living with their partners, who are living in municipalities where JUNTOS arrived up until the year 2012, and who have been living in the municipality for at least five years. Finally, we keep in our empirical sample only women whose households' poverty score lies above the 10th percentile of the distribution of this index.[13] These restrictions ensure that our estimates are closer to identify program-specific intention-to-treat effects on physical IPV, but none of our results is sensitive to any of our sample filters.[14]

Our empirical sample contains information for 18,355 women. These women live in 770 rural municipalities of the DHS sampling frame where JUNTOS was deployed between 2005 and 2012. We provide further details about the sample construction in Appendix B.

3.5 Descriptive Statistics

In Table 1, we provide summary statistics of our indicator for physical IPV and each of its separate components. We report the summary statistics according to the eligibility condition and the exposure to the program. The table shows declines in the prevalence of physical IPV for both eligible and non-eligible women after the inception of JUNTOS. The decline in the prevalence of physical IPV of eligible women (-4.2 percentage points) is larger than that of non-eligible women (-1.2 percentage points).

The difference in trends in the prevalence of physical IPV between eligible and non-eligible women, however, could be only masking differences in the determinants of physical IPV that may arise from imbalances in the distribution of socio-demographic characteristics between the two groups. In such a case, the larger decline in the prevalence of physical IPV observed for eligible women cannot be attributed to the

on violence against women reported being separated or divorced.

[13]Because the poverty score increases in poverty, this is akin to stating that we keep in our empirical sample all women who belong to the poorest 90 percent according to this score.

[14]See Appendix D for further details on our sensitivity checks.

program solely. To test for such differences, in Table 2, we present summary statistics of socio-demographic characteristics (covariates) of women as well as the difference in trends in such characteristics according to the program eligibility condition.

Socio-demographic characteristics are balanced across eligible and non-eligible women. We do not find statistically significant differences in trends in these characteristics when we compare the two groups. Altogether, the evidence seems to suggest that secular changes in the composition of socio-demographic characteristics are not driving the difference in pre-post intervention trends in the prevalence of physical IPV between eligible and non-eligible women.

4 Empirical Methodology

4.1 Principal Difference-in-differences Specification

We implement a quasi-experimental difference-in-differences approach to uncover the causal effect of JUNTOS on physical IPV because the selection of beneficiaries within municipalities and the deployment of the program across municipalities over time are not random. Our identification strategy exploits variation in the timing of exposure to the program across municipalities and the program eligibility condition.

In our difference-in-differences approach, we compare the prevalence of physical IPV between eligible and non-eligible women before and after JUNTOS arrived in their municipalities. Formally, we estimate linear regressions of the form:

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\begin{aligned}
P\text{-}IPV_{ijt} = {} & \beta_0 + \beta_1 \cdot (Eligible_{ijt} \times Exposed_{ijt}) + \beta_2 \cdot Eligible_{ijt} + \beta_3 \cdot Exposed_{ijt} \\
& + X'_{ijt}\psi_1 + I_j + I_y + \varepsilon_{ijt} ,
\end{aligned}
\tag{1}
$$

where $P\text{-}IPV_{ijt}$ is an indicator for physical IPV for a woman i who lives in municipality j and who is surveyed at date (month-year) t. The variables $Eligible_{ijt}$ and $Exposed_{ijt}$ are indicators for being eligible for program participation and being exposed to JUNTOS respectively, X_{ijt} is an array of characteristics of the woman and her relationship, I_j and I_y are municipality and year fixed effects respectively, and ε_{ijt} is an error term.[15]

In our most basic specification, we control for municipality and year fixed effects because JUNTOS deployment across municipalities was staggered over time. The set of municipality fixed effects allows for purging time-invariant effects that are specific to each municipality. The set of year fixed effects accounts for time-varying factors that are common to all municipalities. In additional specifications, we also control for characteristics of the woman and her relationship that may affect physical IPV.[16] We

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[15]In the estimation of standard errors of all our regressions, we allow for an arbitrary correlation across observations within municipalities and cluster standard errors at the municipality level.

[16]The array of woman characteristics includes indicators for the woman's age, educa-

introduce these sets of characteristics to control for potential determinants of physical IPV that are specific to the socio-demographic composition of the household.[17] In our most comprehensive specifications, we add local linear trends in the regressions (either at the province or municipality level) to account for potential deviations from common year effects in the absence of the treatment.[18]

We are interested in estimating the coefficient β_1 on the interaction between eligibility and exposure to JUNTOS. This coefficient captures the inter-temporal (pre-post intervention) change in the prevalence of physical IPV that eligible women experienced relative to their non-eligible counterparts. Importantly, this coefficient is estimated net of local time trends and municipality-specific factors that may jointly determine the evolution of physical IPV. If this coefficient is negative and statistically significant, then this would imply that JUNTOS reduced the prevalence of physical IPV in intervened areas.

The consistency of our parameter of interest relies on two assumptions. The first assumption, parallel pre-intervention trends in outcomes, requires that, in the absence of the program, the prevalence of physical IPV of eligible and non-eligible women would have followed common or parallel trends over time. The second assumption, no spillover effects, requires that the prevalence of physical IPV of non-eligible women would not have been affected by the introduction of the program in their municipalities. Below, we present our approaches for identifying the existence of diverging trends in outcomes and spillover effects.

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tional attainment, ethnicity, and pregnancy status. The array of her relationship characteristics includes indicators for the duration of the relationship and indicators for her partner's age and educational attainment.

[17]A potential caveat of our empirical approach is the possibility that eligible and non-eligible women differ in socio-demographic characteristics that are not observed in the data. To assess whether such imbalances in unobserved socio-demographic characteristics between these two groups may affect our results, in Appendix F we perform an additional robustness check by running regressions from equation (1) and progressively restricting our sample to include non-eligible women whose households' poverty score lies closer to the eligibility cutoff value.

[18]If the comparison group does a good job in picking up time trends unrelated to the program but correlated with physical IPV, then the inclusion of local linear trends should not affect our results.

4.2 Parametric Event Studies

We check for the presence of diverging trends in outcomes between eligible and non-eligible women and for potential spillover effects using two parametric event studies. First, using the temporal dimension in our empirical setting (exposure to JUNTOS), we estimate linear regressions of the form:

$$
\begin{aligned}
P\text{-}IPV_{ijt} = & \sum_{\tau \neq \tau_0} \gamma_\tau \cdot \left(Eligible_{ijt} \times I_{ijt}^\tau \right) + \delta_1 \cdot Eligible_{ijt} + \sum_{\tau \neq \tau_0} \delta_2^\tau \cdot I_{ijt}^\tau \\
& + X_{ijt}' \psi_2 + I_j + I_y + \nu_{ijt} ,
\end{aligned}
\tag{2}
$$

where τ denotes the number of months from/since the date of JUNTOS arrival at the municipality in steps of 12 months and τ_0 indexes the twelve months before the date when JUNTOS reached the municipality. Second, using the cross-sectional dimension in our empirical setting (JUNTOS's eligibility condition), we estimate linear regressions of the form:

$$
\begin{aligned}
P\text{-}IPV_{ijt} = & \sum_{g \neq g_0} \varphi_g \cdot \left(Exposed_{ijt} \times I_{ijt}^g \right) + \alpha_1 \cdot Exposed_{ijt} + \sum_{g \neq g_0} \alpha_2^g \cdot I_{ijt}^g \\
& + X_{ijt}' \psi_3 + I_j + I_y + u_{ijt} ,
\end{aligned}
\tag{3}
$$

where g denotes the distance to/from the eligibility cutoff value in steps of 0.10 units and g_0 indexes the poverty score bracket [-0.10,0.00), corresponding to the group of non-eligible women whose households' poverty score lies just below the eligibility cutoff value.

The rationale of equation (2) is to compare the prevalence of physical IPV between eligible and non-eligible women over time, during the pre- and post-intervention period. If trends in physical IPV of eligible and non-eligible women were not parallel before the intervention, then we should expect estimates of γ_τ to be different from zero for $\tau < \tau_0$. By contrast, if there were parallel trends, then estimates of γ_τ for $\tau < \tau_0$ would not be statistically different from zero and estimates of γ_τ for $\tau > \tau_0$ will trace out the relationship between JUNTOS and physical IPV over time.

The rationale of equation (3) is to compare the prevalence of physical IPV between women exposed and not exposed to the program across the distribution of the poverty score, at different points below and above the eligibility cutoff value. If JUNTOS affected the prevalence of IPV of non-eligible women, then this should become apparent in estimates of φ_g for $g < g_0$. However, if this was not the case, then estimates of φ_g for $g < g_0$ would not be statistically different from zero and estimates of φ_g for $g > g_0$ will trace out the relationship between JUNTOS and physical IPV across the distribution of the poverty score.

4.3 Additional Robustness Analysis

We further test for common trends by using DHS data from the years 2000, 2004, and 2005. These years correspond to the period before the introduction of JUNTOS, since JUNTOS began operating in September of 2005. Thus, we can use data from these years to further analyze the existence of pre-implementation differences in the prevalence of physical IPV between ex-ante eligible and non-eligible women in the form of a falsification test.[19]

One limitation of the data, though, is that the DHS of the years 2000 and 2004 enquire women about *ever* experiencing physical IPV (lifetime physical IPV). By contrast, the DHS of the year 2005 includes questions on both the experience of recent and lifetime physical IPV. Thus, to construct an outcome that is comparable across the three surveys, in this analysis, we focus on lifetime physical IPV only.

With observations for a woman i who lives in municipality j and who is surveyed in year s, we estimate linear regressions of the form:

$$
\begin{aligned}
Lifetime\_P\text{-}IPV_{ijs} \quad = \quad & \sum_{s \neq 2000} \theta_s \cdot (Eligible_{ijs} \times I_s) + \lambda \cdot Eligible_{ijs} \\
& + X'_{ijs}\omega + I_j + I_s + e_{ijs} \ ,
\end{aligned}
\tag{4}
$$

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[19]We use the term "pre-implementation" to refer to the years before the creation or deployment of JUNTOS. Also, to avoid including potentially treated women in our sample, we only use data from the first semester of the DHS of the year 2005.

where $Lifetime\_P\text{-}IPV_{ijs}$ is an indicator for lifetime physical IPV, I_s is an indicator for survey year s, e_{ijs} is an error term, and all the remaining variables have the same definition as in equation (1).

Equation (4) resembles a parametric event study that compares the prevalence of lifetime physical IPV between eligible and non-eligible women in the years before the program implementation. In this specification, data from the year 2000 serve as the baseline and estimates of θ_{2004} and θ_{2005} capture the (pre-program) difference in the prevalence of lifetime physical IPV between the two groups in the years 2004 and 2005 relative to that of the year 2000 respectively. If such estimates are not statistically different from zero, then this provides additional evidence of parallel trends in the prevalence of physical IPV between eligible and non-eligible women in the period when the program did not exist. Notice, however, that by using a lifetime measure of IPV we can only identify changes among women who have ever experienced physical IPV and these changes may not be specific to the twelve months before the survey date.[20]

We also perform additional falsification tests by using pre-determined markers of physical abuse that the woman experienced over time. Specifically, we construct indicators for whether a woman experienced physical violence before the start of her current relationship. These indicators are: (i) witnessing inter-parental violence during childhood; (ii) experiencing corporal punishment as a disciplining method during childhood; and (iii) experiencing physical IPV perpetrated by an ex-partner.[21] The purpose of this exercise is twofold: first, we want to verify that JUNTOS affects current and not past experiences of physical abuse and, second, we want to assess whether imbalances in the experience of past physical abuse between eligible and non-eligible women may bias our results.

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[20]Still, the lifetime measure of IPV is informative about recent episodes of physical IPV as the pre-program correlation between lifetime and recent physical IPV in our sample is 0.51, with 40 percent of women who ever experienced physical IPV reporting that the last of such events occurred within the past twelve months.

[21]The question on whether the woman suffered corporal punishment as a disciplining method during childhood first appeared in the DHS in the year 2010. We limit the analysis on this particular outcome to the years when we observe data.

4.4 Alternate Difference-in-differences Specification

Implicit within the difference-in-differences specification of equation (1) is the assumption that there are no spillover effects from the program. If, however, JUNTOS also affected the prevalence of physical IPV of non-eligible women, then our estimates of β_1 from equation (1) would also pick up its spillover effects on physical IPV. If this were the case, then a better empirical approach would be to perform a difference-in-differences analysis that purges spillover effects by focusing on eligible women only.

In this alternate specification, we take advantage of the staggered deployment of the program across municipalities to use the sub-group of eligible women who live in municipalities where JUNTOS deployment occurred later as a comparison group for those who live in municipalities where JUNTOS deployment occurred earlier. Formally, we estimate linear regressions of the form:

$$P\text{-}IPV_{ij\tau} = \ddot{\beta}_0 + \ddot{\beta}_1 \cdot Exposed_{ij\tau} + X'_{ij\tau}\psi_2 + I_j + I_y + \epsilon_{ij\tau} \,, \tag{5}$$

where all the variables have the same definition as in equation (1) and the difference is that our sample comprises eligible women only. Estimates of $\ddot{\beta}_1$ capture the effect of exposure to JUNTOS on physical IPV on the program's eligible population. This empirical approach is similar to the one used in previous studies evaluating the effect of JUNTOS on spousal abuse (Perova 2010; Ritter 2014), with the difference that these studies include both eligible and non-eligible women in their empirical samples.

As is common to all difference-in-differences specifications, there are standard threats to the identification of the effect of JUNTOS on physical IPV. Most notably, this empirical approach may be subtle to heterogeneity in the local, context-specific determinants of physical IPV. A particular shortcoming involves the possibility that the socio-demographic characteristics of eligible women who live in early- evolved differently from those of women who live in late-intervened municipalities.

In Appendix C, we analyze the pre-implementation trends in socio-demographic

characteristics of eligible women according to the timing of JUNTOS deployment in their municipalities. We find imbalances in pre-implementation trends in socio-demographic characteristics when we compare women who live in early- and late-intervened municipalities. Specifically, we find that eligible women from mid- and late-intervened municipalities were becoming younger and more educated relative to their counterparts from early-intervened municipalities since before the program implementation and this was also the case for their partners. This result may be indicative of heterogeneous pre-program trends in the prevalence of physical IPV across municipalities, which may compromise the interpretation of $\ddot{\beta}_1$ as a consistent, causal estimate of the effect of JUNTOS on physical IPV.

4.5 Estimating Spillover Effects

The possibility of accurately classifying women according to the program eligibility condition in our data allows us to identify potential program spillover effects, as in Haushofer and Shapiro (2016) and Haushofer et al. (2019). Spillover effects in the context of JUNTOS could arise for several reasons. First, the presence of the program's personnel in the municipality is observable to everyone in the community. This may increase the social cost of exerting violence for men from both eligible and non-eligible households. Second, eligible women make more use of public health services because of the program conditions. This could make the signs of violence visible to and increase the awareness of healthcare practitioners towards IPV, which may affect both eligible and non-eligible women attending healthcare centers. Finally, greater interaction between beneficiary women and the program's personnel could make the signs of violence visible to everyone. This greater visibility may increase collective consciousness and trigger community activism to prevent IPV, which may affect both eligible and non-eligible women.

In our empirical setting, we can identify potential program spillover effects by comparing the evolution of the prevalence of physical IPV of non-eligible women who live in municipalities that are already covered by JUNTOS to that of non-eligible

women who live in municipalities not yet covered by it. This comparison is akin to the difference-in-differences specification of equation (5), but focusing on non-eligible women only. Angelucci and De Giorgi (2009) and Haushofer et al. (2019) utilize similar empirical approaches for identifying program spillover effects.

In Appendix C, we provide evidence on the balancedness in the evolution of pre-implementation socio-demographic characteristics of non-eligible women who live in early-, mid-, and late-intervened municipalities. Based on this evidence, estimates of $\ddot{\beta}_1$ from equation (5) using the sub-sample of non-eligible women would be informative about the effects of JUNTOS on physical IPV for untreated women. Under the assumption that there are no spillover effects, we should expect these estimates to be statistically insignificant.

5 Results

5.1 Effect of JUNTOS on Physical IPV

In Table 3, we report point estimates of the effect of JUNTOS on physical IPV. Each column of the table shows an estimate of β_1 from different specifications of equation (1). We begin with our most basic specification without including covariates in the regression in column 1, and we progressively add characteristics of the woman and her relationship as conditioning variables in the regressions in columns 2 and 3, respectively. Finally, in columns 4 and 5, we add province and municipality linear trends, respectively, to further control for local, time-varying characteristics in the regressions.

The estimate arising from our most basic specification indicates that the prevalence of physical IPV declined by 3 percentage points, or by 25 percent relative to the pre-implementation mean, after the introduction of JUNTOS.[22] The point estimate remains unchanged when we add different sets of covariates to account for the woman's and her marital/relationship characteristics in the regressions (see columns 2 and 3). However, the point estimate increases slightly when we further control for local linear trends (see columns 4 and 5). In our most comprehensive specification that includes municipality linear trends, we find that the prevalence of physical IPV declined by 3.3 percentage points, or by 28 percent relative to the pre-implementation mean, after the introduction of JUNTOS.

In Appendix D, we show that our results are not sensitive to our sampling filtering procedure. We relax each of our sample filters and find that the set of point estimates of β_1 from our most comprehensive specification of equation (1) that includes the full set of covariates as well as municipality linear trends range between -3 and -3.5 percentage points which is very similar to our principal estimates reported in Table 3. These results imply a reduction in the prevalence of physical IPV in the range of 20-30

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[22]Throughout, we compute effect sizes by dividing the point estimates by the corresponding outcome mean of non-eligible women observed in the year 2005. Our estimated effect sizes do not change if we use the outcome mean of non-eligible women observed during the pre-intervention period in their municipalities as the alternate baseline.

percent relative to the pre-implementation mean after the introduction of JUNTOS.

In Appendix E, we further flesh out our estimates of the effect of JUNTOS on physical IPV according to the severity of the physically violent act.[23] We find a 3.5 percentage points decline (30 percent relative to the pre-implementation mean) in the prevalence of moderate physical IPV but no change in the prevalence of severe physical IPV after the introduction of JUNTOS. These results relate to our finding that women did not experience a decline in the probability of having physical trauma from the abuse after the introduction of JUNTOS. In particular, this is consistent with the finding that JUNTOS only affected the probability of experiencing moderate (but not severe) physical IPV as these acts have a lower likelihood of impairing a woman's physical integrity.

Overall, we find that JUNTOS reduced physical IPV. This reduction is sizable, implying a decline in the prevalence of physical IPV by 25-30 percent relative to the pre-implementation mean. Our results also indicate that the decline in the prevalence of physical IPV is characterized almost exclusively by a reduction in the probability of experiencing moderate, but not severe, acts of physical IPV. This result partially explains why we do not find an associated reduction in the probability of experiencing physical trauma from the abuse after the introduction of JUNTOS.

5.2   Robustness Checks

In Figure 1 we plot estimates of γ_τ from the parametric event study of equation (2), where the negative values on the horizontal axis correspond to women surveyed before, and the positive values correspond to women surveyed after JUNTOS reached their municipalities. Based on the F-test of joint significance, we cannot reject the null

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[23]We follow Bott et al. (2012) and construct indicators for a woman's experience of moderate and severe acts of physical IPV during the past twelve months. The former includes the experience of violent acts such as being pushed/shook, slapped, punched, or kicked/dragged. The latter includes the experience of violent acts such as being choked/burnt, threatened with a knife/gun, or attacked with a knife/gun. This classification follows from the idea of ranking a physically violent act according to its likelihood of causing physical injuries to the victim (Garcia-Moreno et al. 2005).

hypothesis that the program effects during the pre-intervention years are jointly equal to zero. This result provides evidence in favor of pre-intervention common trends between eligible and non-eligible women. By contrast, we find a larger decline in physical IPV experienced by eligible women when compared to their non-eligible counterparts in the years following JUNTOS deployment. This decline was sustained over time, even five years after the introduction of the intervention.

In Figure 2 we plot estimates of φ_g from the parametric event study of equation (3), where the values on the horizontal axis indicate the distance in the poverty score from the eligibility cutoff value. The negative values correspond to non-eligible women and the positive values correspond to eligible women. Again, based on the F-test of joint significance, we cannot reject the null hypothesis that the program effects for non-eligible women are jointly equal to zero. This evidence suggests that JUNTOS did not introduce spillover effects. For the group of eligible women, on the other hand, we find a sustained reduction in physical IPV across the distribution of the poverty score.[24]

Next, we turn to examine the balance in lifetime physical IPV between eligible and non-eligible women during the pre-implementation years. In Table 4, we present estimates of θ_s from our most comprehensive specification of equation (4). In column 1, we use data from the years 2000 and 2004, in column 2, we use data from the years 2000 and 2005, and in column 3, we pool together data from the three years. We do not find statistically significant effects on lifetime physical IPV in any of the three regressions. Furthermore, when we pool the data from the three years, we cannot reject the null hypothesis that our estimates of θ_{2004} and θ_{2005} are jointly equal to zero. These results provide further evidence on parallel trends of physical IPV between eligible and non-eligible women during the period when the program did not exist.

In Appendix F, we present additional robustness analyses. We provide further evidence that there are no differences in past experiences of abuse between eligible and non-eligible women that may explain the decline in the recent experience of physical

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[24]Appendix Figure E.1 plots the corresponding parametric event study estimates from equations (2) and (3) of the effect of JUNTOS on moderate and severe acts of physical IPV. We derive similar conclusions from this figure.

IPV that we observe after the introduction of JUNTOS. We also show that our estimates are robust to increases in the stringency of our sample inclusion criterion for our comparison group that make women in both groups more similar to one another.

5.3 Alternate Specification and Spillover Effects

We next turn to discuss our estimates of $\ddot{\beta}_1$ from equation (5) for the sample of eligible women, that we present in Table 5. We find that physical IPV declined by 5.5-6.5 percentage points after the introduction of JUNTOS. These estimates imply a decline in the prevalence of physical IPV that is in the order of magnitude of around 40-50 percent relative to the pre-implementation mean. The point estimate, however, is imprecisely estimated when we add municipality linear trends in the regression.

Our estimates from both difference-in-differences specifications are qualitatively similar and point to a negative effect of JUNTOS on physical IPV. Taken at face value, however, our estimates from the alternate specification are almost twice as large as those from our principal difference-in-differences specification. Despite these differences, we cannot reject the null hypotheses that these alternate estimates are statistically different from the point estimate $\hat{\beta}_1 = $ -0.033 from our most comprehensive specification of equation (1), as evidenced by the results from the F-tests presented at the bottom of the table.

Turning to the analysis of spillover effects, in Figure 2, we presented evidence supporting the fact that JUNTOS did not affect the prevalence of IPV of non-eligible women. We provide additional evidence of no spillover effects by obtaining estimates of $\ddot{\beta}_1$ from equation (5) for the sample of non-eligible women. Because these women do not belong to the treatment group, we should expect these estimates to be statistically insignificant if there are no spillover effects of JUNTOS on physical IPV.

In Table 6, we present the results of this analysis. We do not find statistically significant effects of JUNTOS on the prevalence of IPV of non-eligible women.[25] The

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[25]Our results are similar when we restrict the sample to include non-eligible women who live in the 618 municipalities from the sample used to estimate the regressions presented in Table 5.

point estimate becomes almost zero when we add municipality linear trends in the regression. These results strengthen our claim that the introduction of JUNTOS did not affect the prevalence of physical IPV of non-eligible women and further validates the robustness of our principal difference-in-differences specification.

5.4 Benchmarking Effect Sizes

We estimate a reduction in physical IPV after the introduction of JUNTOS that corresponds to an effect size of 25-30 percent relative to the pre-implementation mean. This effect size is comparable in magnitude with those reported by previous studies that analyze similar measures of physical IPV. Effect sizes reported by past studies, though, can vary according to the type of the CT program.

Effect sizes of CCT programs are generally larger. These range from 30 percent for the cash transfer arm of the *World Food Programme Pilot* in Ecuador (Hidrobo et al. 2016) and 34 percent for *HIV Prevention Trial Network* in South Africa (Kilburn et al. 2018) to 56 percent for *Oportunidades* in Mexico (Bobonis et al. 2013). For UCT programs, effect sizes range from 0 percent for the cash and food transfers arms of the *Transfer Modality Research Initiative* in Bangladesh (Roy et al. 2019) to 25 percent for *Give Directly* in Kenya (Haushofer and Shapiro 2016). Yet, effect sizes of UCT programs can vary if other program components accompany cash transfers. In particular, Roy et al. (2019) document a 26 percent reduction in physical IPV for the *Transfer Modality Research Initiative* that combines cash and food transfers with intensive nutrition behavior change communication.

In the context of JUNTOS in Peru, previous studies also document reductions in physical IPV after the introduction of the program. These reductions, however, are of magnitudes larger than what our findings indicate: Perova (2010) reports an effect size of 64 percent and Ritter (2014) of 46 percent. These figures are comparable in magnitude to our alternate estimate of a decline of roughly 45 percent in physical IPV observed after the introduction of JUNTOS but are at least twice as large as our principal estimate of the effect size of JUNTOS on physical IPV.

Our analysis does not point to the existence of program spillover effects that could explain the gap between the estimates obtained from our principal and alternate empirical methodologies. We believe, however, that imbalances in pre-implementation trends in socio-demographic attributes between eligible women from early- and late-intervened municipalities can introduce heterogeneity in the evolution of physical IPV that is unrelated to the program, and this may bias the estimates from the alternate empirical methodology. We therefore take these estimates with caution.[26]

5.5   Effect of JUNTOS on Other Forms of IPV

We close this section by exploring the effects of JUNTOS on other forms of IPV. In column 1 of Table 7, we reproduce the estimate of the effect of JUNTOS on physical IPV and add estimates of the effect of JUNTOS on sexual IPV and emotional/psychological IPV in columns 2 and 3, respectively. We present estimates from our most comprehensive specification of equation (1). In Appendix G, we present estimates from other specifications along with additional analyses.

Focusing on other forms of IPV, we find that the prevalence of sexual IPV declined by nearly 45 percent relative to the pre-implementation mean after the introduction of JUNTOS. Yet, we find no effects on the prevalence of emotional/psychological IPV.[27] The pattern of results that shows that JUNTOS reduced the prevalence of physical and sexual but not emotional/psychological IPV is consistent with previous results in the literature of CT programs and IPV (Buller et al. 2018).[28]

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[26]In particular, if the prevalence of physical IPV declined more in early- relative to late-intervened municipalities (as the differences in trends in socio-demographic characteristics suggest), then estimates of $\ddot{\beta}_1$ from equation (5) for the sub-group of eligible women would be capturing these heterogeneities and would likely overestimate (in absolute terms) the effect of JUNTOS on physical IPV. See our discussion in Appendix C for further details.

[27]However, we take the result on emotional/psychological IPV with caution as we find diverging pre-program trends in the prevalence of this form of IPV between eligible and non-eligible women that may introduce bias in our estimates (see Appendix G).

[28]A more recent study by Heise et al. (2019), however, suggests that a better way of defining emotional/psychological IPV should take into account the frequency of specific acts of psychological abuse to avoid confounding low-level conflict tactics from clinically relevant abuse. Our results do not change when we redefine the indicator for the experience of emotional/psychological IPV by taking into consideration the frequency of such

6   Channels of Impact

We use the information available in the DHS to analyze potential mechanisms through which JUNTOS could have reduced the prevalence of physical IPV. These mechanisms encompass female outcomes, including women's agency and empowerment, and male outcomes, including controlling and supportive behaviors towards their wives as well as undesired behaviors related to alcohol use disorders. All these outcomes are linked to the potential channels of impact established by Buller et al. (2018), and we explain their construction in Appendix H.[29] For concreteness, all the estimates discussed in this section come from our most comprehensive specification of equation (1).

In columns 1 through 4 of Table 8, we present estimates of the effect of JUNTOS on female outcomes. These include decision-making autonomy (column 1), justification of (tolerance to) wife-beatings (column 2), working for pay (column 3), and earning more than her partner (column 4). These outcomes relate to the women's empowerment channel of impact whereby JUNTOS can increase women's participation in household decision-making, financial autonomy, and productive investments, potentially making them less tolerant to wife-beatings and husband abuse.

Our results do not point towards these outcomes as potential channels of impact as we do not find statistically significant effects of JUNTOS on any of these. This suggests, in principle, that women's empowerment does not mediate the observed decline in the prevalence of physical IPV observed after the introduction of JUNTOS. However, we cannot be conclusive as our set of outcomes is limited. It is worth mentioning that quantitatively measuring female empowerment is a difficult task (Peterman et al. 2015) and that the evidence on the link between CT programs and female empowerment is at best mixed (van den Bold et al. 2013; Alcazar et al. 2016; Bonilla et al. 2017).

In columns 5 through 8 of Table 8, we present estimates of the effect of JUNTOS on male outcomes. These include marital controlling behaviors (column 5), emotional

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abusive acts.

[29]One limitation of the DHS is that it does not contain recall periods for some of the transmission channels that we revise and, because of this, we cannot link these channels directly to the reference period encompassing the twelve months before the survey date.

support towards their wives (column 6), frequent alcohol consumption (column 7), and alcohol-related aggression (column 8), all of them constructed from women's reports to the DHS.[30] While the first two outcomes relate to male partners' responses towards a higher independence of women, the last two link to undesired behaviors that can arise from financial stress and disputes over the use of the money among partners, and that can escalate into events of violence.

We do not find statistically significant effects on marital controlling behaviors exerted by male partners, which is consistent with the idea that men do not react negatively to the women's receipt of the transfer. By contrast, we do find an increase in the emotional support exerted by male partners towards women, although the effect size is negligible.

Remarkably, we find a 2.5 percentage point (around 40 percent relative to the pre-implementation mean) and a 2.4 percentage point (around 35 percent relative to the pre-implementation mean) reduction in frequent alcohol consumption and alcohol-related aggression from male partners, respectively. The latter constitutes an important finding if one considers that roughly 20 percent of recent episodes of physical IPV experienced by women were committed when their partners were under the influence of alcohol (INEI 2016).[31] Besides, heavy alcohol consumption is regarded as one of the principal behaviors triggering physical IPV as "[it] is thought to reduce inhibitions, cloud judgment, and impair inability to interpret social cues" (Jewkes 2002).[32]

The decline in frequent alcohol consumption from male partners links to two previous empirical findings. On the one hand, past studies document that households

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[30]The phrasing of the question on alcohol-related aggression also includes intoxication by hard drugs. Yet, the most recent study about drug consumption in Peru indicates that only 0.7 percent of the rural population in the 12-65 age range has ever tried illegal drugs, which suggests that intoxication in rural areas is mostly the result of excessive alcohol consumption (DEVIDA 2012).

[31]This figure edges up to 60 percent if one considers lifetime physical IPV as the reference.

[32]This result can also link to the behavioral "cue-triggered" theory whereby men can "lose control" in response to some negative cues (Card and Dahl 2011).

do not allocate money coming from public transfers to the consumption of temptation goods, such as tobacco and alcohol, but rather increase their expenditure share on food, especially when the transfers are given to women (Armand et al. 2016). In fact, in a recent overview study, Evans and Popova (2017) concluded that "[a]lmost without exception, studies find either no significant impact or significant negative impact of transfers on temptation goods." Thus, the decline in frequent alcohol consumption from male partners provides evidence against the increased intra-household conflict channel.

On the other hand, previous work documents that life stressors, such as economic hardship, can increase the risk of alcohol use disorders (Keyes et al. 2012) which further links to instances of spousal abuse (Jewkes 2002). Reductions in stress levels that result from increased economic security from public transfers can lead to declines in male heavy-drinking, which is in line with previous empirical findings that CT programs reduce men's alcohol abuse and aggressive behavior (Angelucci 2008). Thus, our finding of a decline in frequent alcohol consumption from male partners provides support for the economic security and emotional well-being channel as a potential causal chain explaining our result of a reduction in physical IPV observed after the introduction of JUNTOS.

Finally, it is important to emphasize that this channel relates almost exclusively to changes in intra-household dynamics. This provides further support for why we do not find program spillover effects. Specifically, this finding suggests that JUNTOS improved household financial security and reduced poverty-related stress and thereby undesired behaviors from male partners; a result that does not imply a broader change at the societal/community level but rather at the household/couple level.

7 Conclusion

In this paper, we assess the effect of the Peruvian CCT program, JUNTOS, on physical IPV experienced by women in rural areas of the country. Our main result is that the prevalence of physical IPV declined by 25-30 percent after the phase-in of JUNTOS. This effect did not fade over time and was sustained even five years after the introduction of the intervention. We also find that the decline in physical IPV relates mainly to moderate, but not severe, instances of physical abuse.

Changes in female empowerment do not seem to play a role in the decline of physical IPV. Our results do not support the channel from cash transfers to reduced physical IPV through increases in women's outside options nor through changes in their power position within the household. Similarly, our results do not indicate that couple well-being is a mediator of the decline in physical IPV as we do not observe changes in male behaviors related to marital control or emotional support towards women.

Conversely, we do find supporting evidence for the economic security and emotional well-being channel from cash transfers to reductions in physical IPV. In particular, we provide evidence of reduced alcohol consumption as a mediator of the effect of JUNTOS on physical IPV. We find that frequent alcohol consumption and alcohol-related aggression from male partners, behaviors that link to poverty-related stress, declined sharply after the introduction of JUNTOS.

In a complementary analysis, we also assess the extent of the potential for spillover effects of JUNTOS. Our results suggest that there are no such spillover effects. To the extent that JUNTOS increased household economic security and reduced poverty-related stress, it seems likely that the effects on IPV accrue from changes in intra-family dynamics but not in broader levels that may include the community.

The majority of CT programs – conditional or unconditional – deployed around the developing world do not explicitly aim at reducing gender violence. Policies aiming at this goal, and at achieving gender equality, would require a more comprehensive view and specific elements to work both at the household, community, societal, and structural levels. However, as the cumulative evidence suggests, these programs have

the potential to reduce IPV, the most common form of violence against women, and help to achieve an equal society with lower disparities between men and women. Therefore, a better understanding of how and under what circumstances CT programs affect IPV can help policymakers improve their design features to maximize potential gains and minimize undesired effects (Buller et al. 2018).

In this regard, we make two contributions to the literature on CT programs and IPV. First, we provide further empirical evidence on the alcohol channel, which relates to the economic security and emotional well-being pathways from CCT programs to IPV. Second, we provide additional empirical evidence that points to no program spillover effects, which implies that targeting design and implementation may be critical for maximizing impacts on IPV in contexts similar to those of the JUNTOS program.

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Tables

Table 1: Summary Statistics of Outcomes

	Non-eligibles		Eligibles	
	Not Exposed	Exposed	Not Exposed	Exposed
Physical IPV	0.134	0.122	0.147	0.105
Pushed/shook	0.105	0.094	0.113	0.079
Slapped	0.075	0.071	0.094	0.071
Punched	0.083	0.073	0.099	0.071
Kicked/dragged	0.057	0.051	0.074	0.053
Choked/burnt	0.012	0.012	0.018	0.016
Threatened with a gun	0.009	0.010	0.017	0.011
Attacked with a gun	0.005	0.006	0.009	0.006
Observations	2,874	9,267	1,715	4,499

Note: The table shows the sample means of the indicator for physical IPV, and each of its components, experienced by women during the twelve months before the survey date, according to the eligibility condition and exposure to the program. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, and who belong to the poorest 90% according to the program's poverty score. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 2: Summary Statistics of Covariates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							Difference	
		Non-eligibles			Eligibles		in Trends	
	Not		Diff.	Not		Diff.	Diff.	
	Exposed	Exposed	(2)-(1)	Exposed	Exposed	(5)-(4)	(6)-(3)	p-value
Woman's age	33.538	33.339	-0.199	33.718	33.824	0.106	0.304	0.344
Woman's schooling (years)	6.336	5.957	-0.379	4.265	3.663	-0.602	-0.223	0.174
Woman's ethnicity (Spanish as mother tongue)	0.733	0.615	-0.117	0.638	0.485	-0.153	-0.036	0.362
Woman is pregnant	0.050	0.053	0.003	0.079	0.068	-0.011	-0.014	0.156
Duration of the relationship (years)	14.265	14.000	-0.266	14.858	14.744	-0.115	0.151	0.627
Partner's age	37.564	36.986	-0.579	38.075	37.788	-0.287	0.292	0.407
Partner's schooling (years)	7.749	7.554	-0.195	5.785	5.419	-0.366	-0.171	0.310

Note: The table shows the sample means and trends in covariates according to the eligibility condition and exposure to the program, and the differences in trends in covariates between women eligible and not for program participation. The sample size for calculating the differences in trends is 18,355 observations. See the notes in Table 1 and the main text for information about the sample composition. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 3: Effects of JUNTOS on Physical IPV

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:		Woman Experienced Physical IPV			
		(Pre-implementation Mean: 0.123)			
Eligible $\times$ Exposed to JUNTOS	-0.030**	-0.030**	-0.030**	-0.034**	-0.033**
	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)
N	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770
R-squared	0.074	0.076	0.081	0.091	0.119
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different specifications of equation (1) in section 4. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. The vector of individual controls include indicators for the woman's age (21-25; 26-30; 31-35; 36-40; 41-45; 46-49; base: 20 or younger), indicators for the woman's educational attainment (incomplete primary; complete primary; some high school; high school degree; base: no education), an indicator for whether the woman's mother tongue is Spanish, and an indicator for whether the woman is pregnant. The vector of marital/relationship controls includes an indicator for being married, indicators for the duration of the relationship (2-5 years; 6-9 years; 10-14 years; 15 years or more; base: 1 year or less), indicators for the partner's age (21-25; 26-30; 31-35; 36-40; 41-45; 46 or more; base: 20 or younger), and indicators for the partner's educational attainment (incomplete primary; complete primary; some high school; high school degree; base: no education). Further details of each specification are described within the table. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 4: Robustness Checks (Pre-program Years)

Dependent Variable:	(1)	(2)	(3)
	Lifetime P-IPV		
	(Mean in Year 2000: 0.398)		
Eligible × Year 2004	-0.077		-0.073
	(0.063)		(0.062)
Eligible × Year 2005		0.015	0.010
		(0.052)	(0.052)
N	3,290	3,406	4,037
Number of clusters	281	286	312
R-squared	0.215	0.205	0.213
F-stat. $(H_0 : \hat{\theta}_{2004} = \hat{\theta}_{2005} = 0)$			0.860
p-value			[0.42]
Individual controls	Yes	Yes	Yes
Marital/relationship controls	Yes	Yes	Yes
Municipality linear trends	Yes	Yes	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of θ_s from different specifications of equation (4) in section 4. The dependent variable is an indicator for whether the woman *ever* experienced physical IPV. The outcome mean corresponds to that of non-eligible women observed in the year 2000. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, who belong to the poorest 90% according to the program's poverty score, and who were surveyed by the DHS in the years 2000, 2004, or in the first semester of the year 2005. Further details of each specification are described within the table. The data come from the 2000 and 2004 (column 1), the 2000 and 2005 (column 2), and the 2000, 2004 and 2005 (column 3) Peruvian Demographic and Health Surveys (DHS).

Table 5: Effects of JUNTOS on Physical IPV (Alternate Specification)

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:		Woman Experienced Physical IPV			
		(Pre-implementation Mean: 0.130)			
Exposed to JUNTOS	-0.056**	-0.056**	-0.057**	-0.065**	-0.057
	(0.028)	(0.028)	(0.028)	(0.031)	(0.049)
N	6,214	6,214	6,214	6,214	6,214
Number of clusters	618	618	618	618	618
R-squared	0.138	0.140	0.147	0.165	0.213
F-stat. ($H_0 : \hat{\ddot{\beta}}_1 = -0.033$)	0.690	0.692	0.771	1.065	0.227
p-value	[0.406]	[0.406]	[0.380]	[0.302]	[0.634]
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of $\ddot{\beta}_1$ from different specifications of equation (5) in section 4. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, and who are eligible for program participation. Further details of each specification are described within the table. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 6: Spillover Effects of JUNTOS on Physical IPV

Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Woman Experienced Physical IPV				
	(Pre-implementation Mean: 0.123)				
Exposed to JUNTOS	-0.012	-0.012	-0.013	-0.001	0.005
	(0.016)	(0.016)	(0.016)	(0.017)	(0.022)
N	12,141	12,141	12,141	12,141	12,141
Number of clusters	755	755	755	755	755
R-squared	0.092	0.094	0.099	0.113	0.150
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of $\ddot{\beta}_1$ from different specifications of equation (5) in section 4. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, who belong to the poorest 90% according to the program's the poverty score, and who are not eligible for program participation. Further details of each specification are described within the table. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 7: Effects of JUNTOS on Other Forms of IPV

	(1)	(2)	(3)
Dependent Variable:			Emotional/
	Physical	Sexual	Psych.
	IPV	IPV	IPV
Eligible × Exposed to JUNTOS	-0.033**	-0.019**	-0.012
	(0.015)	(0.009)	(0.016)
N	18,355	18,355	18,355
Number of clusters	770	770	770
R-squared	0.119	0.094	0.116
Pre-implementation mean	0.123	0.043	0.133
Individual controls	Yes	Yes	Yes
Marital/relationship controls	Yes	Yes	Yes
Municipality linear trends	Yes	Yes	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different regressions based on equation (1) in section 4. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of each dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. Further details of each regression are described within the table. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Table 8: Channels of Impact

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female Outcomes				Male Outcomes			
	Decision Making Autonomy	Justifies Wife Beatings	Paid Work	Earns More than Partner	Marital Control	Emotional Support	Frequent Alcohol Consumpt.	Alcohol-related Aggresion
Eligible × Exposed to JUNTOS	-0.002	0.004	0.018	0.013	0.002	0.007*	-0.025**	-0.024**
	(0.013)	(0.013)	(0.019)	(0.012)	(0.021)	(0.004)	(0.011)	(0.011)
N	18,355	18,355	18,355	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770	770	770	770
R-squared	0.128	0.106	0.283	0.123	0.139	0.097	0.112	0.122
Pre-implementation mean	0.900	0.146	0.801	0.066	0.738	0.996	0.060	0.070
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital/relationship controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality linear trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different regressions based on equation (1) in section 4. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of each dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are shown in parentheses. See the notes in Table 1 and the main text for information about the sample composition. Further details of each regression are specified within the table. The data come from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Figure Legends

Figure 1

Event Study Estimates of the Effect of JUNTOS

on Physical IPV

(Temporal Dimension)

<u>Source</u>: Authors' calculations based on the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

<u>Note</u>: The figure shows estimates of γ_τ, along with their 95% confidence intervals, from equation (2) in section 4. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. Standard errors are clustered at the municipality level. The regression includes woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as covariates. The survey date is expressed relative to the twelve months before program arrival, so that the negative values on the horizontal axis correspond to women surveyed before and the positive values correspond to women surveyed after JUNTOS was deployed in the municipality. The F-statistic of a joint significance test of pre-intervention effects ($H_0 : \hat{\gamma}_{\tau_0 - 2} = \hat{\gamma}_{\tau_0 - 1} = 0$) and its associated p-value (in brackets) are reported at the bottom of the graph.

Figure 2

Event Study Estimates of the Effect of JUNTOS

on Physical IPV

(Cross-sectional Dimension)

Source: Authors' calculations based on the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Note: The figure shows estimates of φ_g, along with their 95% confidence intervals, from equation (3) in section 4. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. Standard errors are clustered at the municipality level. The regression includes woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as covariates. The poverty score has been normalized around the eligibility cutoff value, so that the negative values on the horizontal axis correspond to non-eligible women and the positive values correspond to eligible women. The F-statistic of a joint significance test of non-eligibility effects ($H_0 : \hat{\varphi}_{-0.6} = \hat{\varphi}_{-0.5} = \hat{\varphi}_{-0.4} = \hat{\varphi}_{-0.3} = \hat{\varphi}_{-0.2} = \hat{\varphi}_{-0.1} = 0$) and its associated p-value (in brackets) are reported at the bottom of the graph.

Figures

Figure 1

Event Study Estimates of the Effect of JUNTOS on

Physical IPV

(Temporal Dimension)

F-stat. of a joint significance test of pre-intervention effects = 0.92
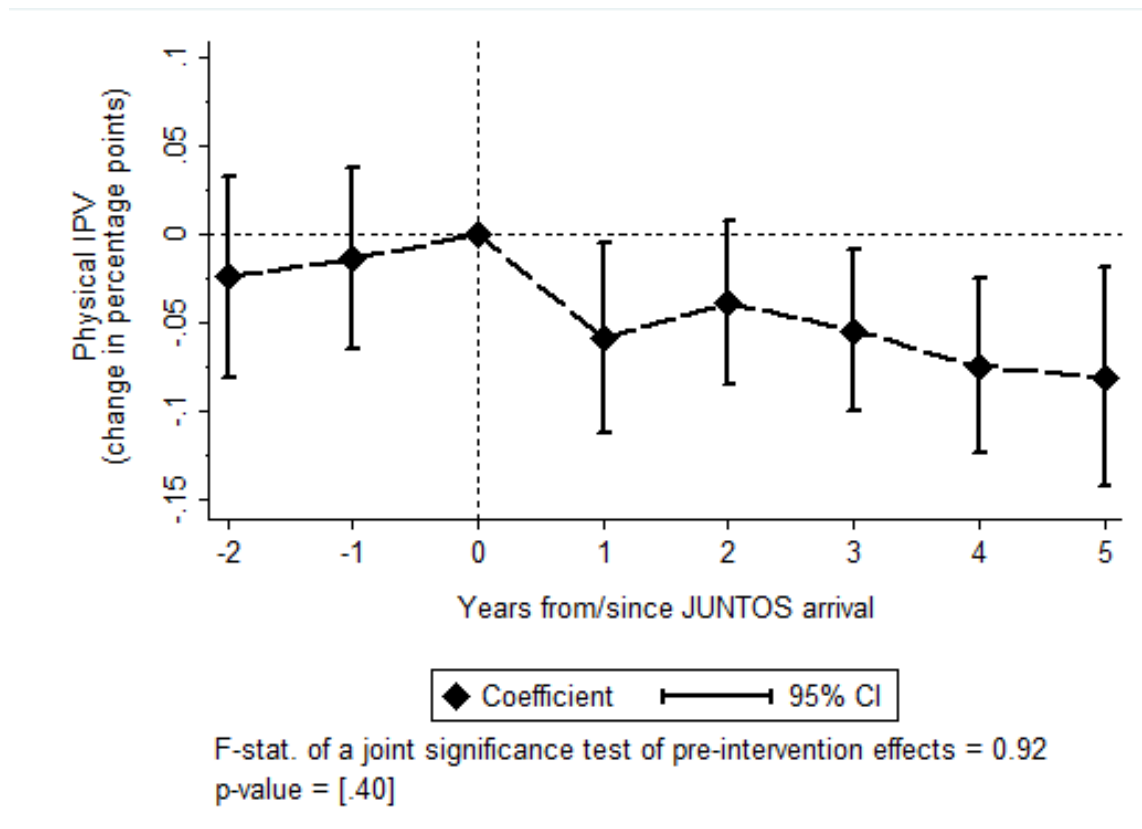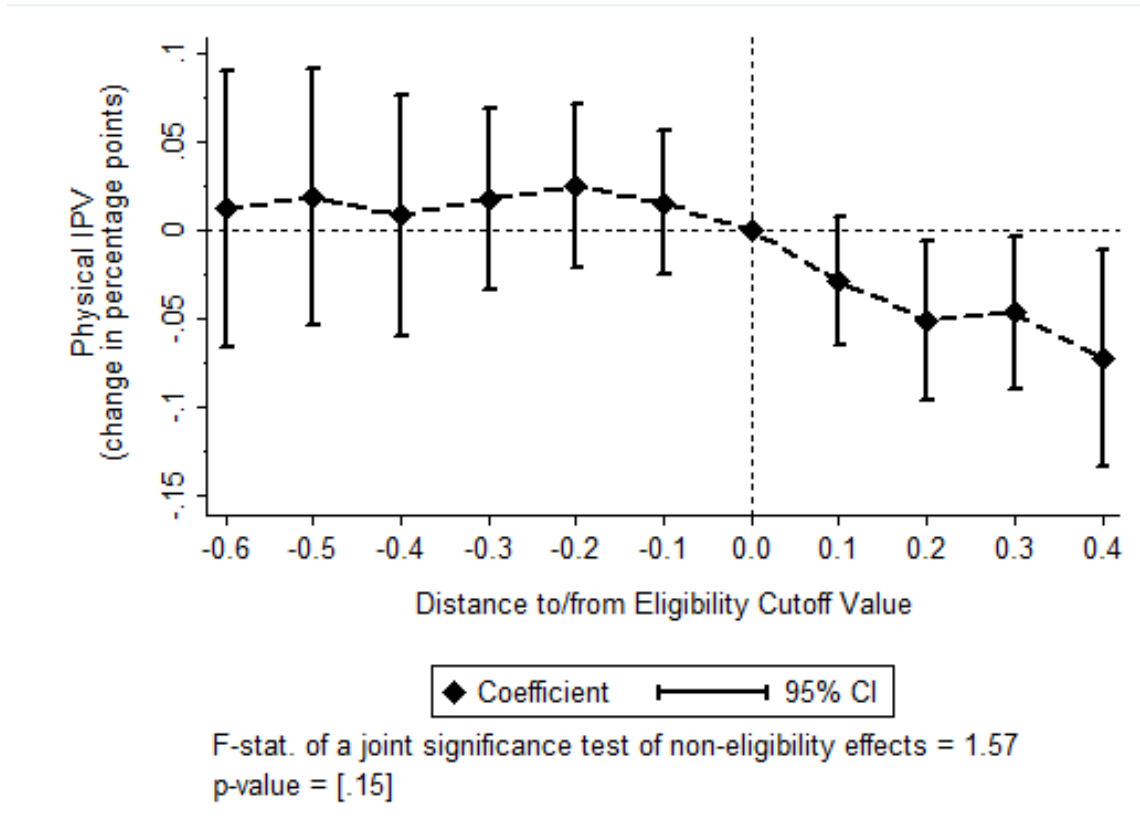p-value = [.40]

Figure 2

Event Study Estimates of the Effect of JUNTOS on

Physical IPV

(Cross-sectional Dimension)

Online Appendix Material for:

(Un)Conditional Love in the Time of Conditional Cash Transfers:

The Effect of the Peruvian JUNTOS Program on Spousal Abuse

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GRADE   PSE

March 2020

A. JUNTOS Expansion and Eligibility Criteria

JUNTOS is a means-tested program. The selection of beneficiary households consists of three stages. The first stage relates to geographical targeting. The second stage consists of determining which households are eligible for program participation. The last stage consists of communal validation of eligible households. In this appendix, we explain in detail the first two stages of the selection of beneficiary households.

A.1. Program Deployment Over Time

The first stage of the JUNTOS targeting procedure consists of selecting the municipalities where JUNTOS will be deployed over time. According to the program's Guidelines for Operations, the selection of eligible municipalities is based on three criteria: (i) exposure to the armed conflict during the late 1980s and early 1990s; (ii) poverty level; and (iii) chronic malnutrition of children under age 5.

JUNTOS was initially deployed in municipalities with poverty rates above 50 percent and child malnutrition greater than 30 percent. However, the poverty level cutoff was changed in the year 2011 to include municipalities where the poverty rates were between 40 and 50 percent. As a result, the program went from covering around 700 municipalities in the year 2011 to cover more than 1,000 municipalities by the end of 2012. In Appendix Figure A.1, we depict the program expansion across municipalities and over time (Panel A) as well as the poverty rates and child malnutrition rates of municipalities incorporated to JUNTOS between 2005 and 2012 (Panel B).

Appendix Figure A.1: JUNTOS Expansion Over Time

(A) Program Deployment   (B) Geographical Targeting
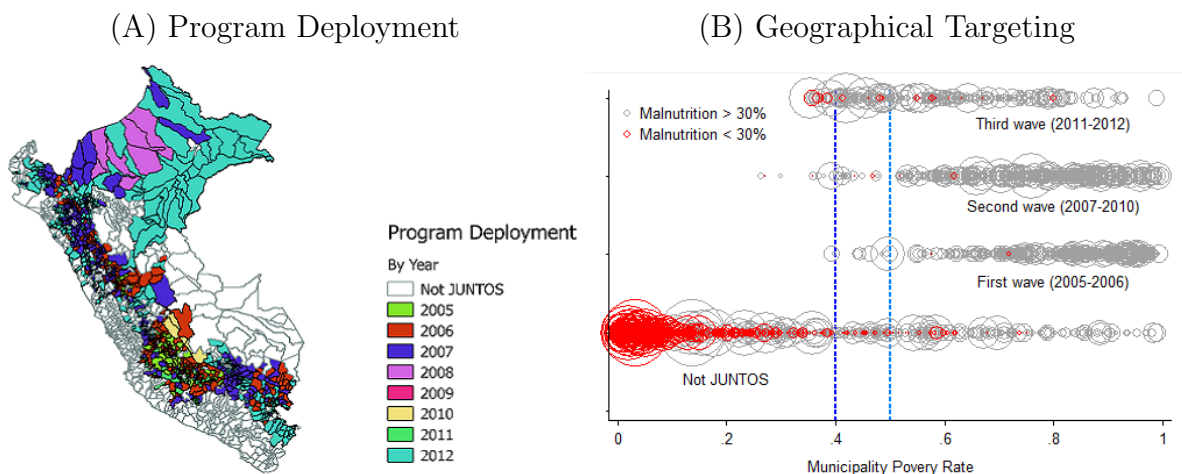
Note: The figure shows the program deployment across municipalities and over time (Panel A) and the municipalities where JUNTOS was deployed between 2005 and 2012 by poverty rates (weighted by population size) of the year 2005 (Panel B).
Source: JUNTOS administrative records (http://www.juntos.gob.pe).

A.2. Computation of the Poverty Score and Eligibility Criteria

Household targeting is the second stage performed after selecting municipalities where the program will be deployed. The objective is to determine household eligibility, taking into account the socio-economic and demographic characteristics of the population. For this purpose, a census was carried out in selected municipalities by the INEI.

Until 2010, the first filter was made for households with the presence of a mother or a pregnant woman, a widowed father, or a caregiver with children ages 14 or younger. From 2011 onwards, the rule was changed to include households with children ages 18 or younger. Information collected from the census was then used for the computation of an algorithm that classifies poor and non-poor households.

Between 2005 and 2011, the procedure took the results from a Logit model that estimates the probability of a household being poor based on observed characteristics. Estimations were performed by the program's administration in 2005, using information from the National Household Survey (ENAHO for its Spanish acronym) over the period 2001-2004. The household variables included in the Logit model were: the ratio of illiterate adult women over the total number of adults living in the household, the ratio of children (ages 17 or younger) attending school over the total number of children in the household, an indicator for whether the household uses industrial fuels for cooking (gas, electricity, kerosene), the number of durable assets (TV, refrigerator, iron, gas stove, motor vehicle, non-motor vehicle), the number of basic services available in the house 24 hours per day (electricity, water, sanitation), and indicators for different combinations of materials used for constructing the house, including materials used for the floor, walls, and ceiling.

The resulting coefficient estimates were used to compute a poverty score with a value ranging between 0 and 1. The eligibility cutoff value was established by the program's administration, based on the poverty rate of rural municipalities. A household was considered eligible for program participation if its poverty score was equal to or greater than 0.7567.

In the year 2012, the new Ministry of Development (MIDIS) absorbed JUNTOS and other social protection programs. MIDIS also absorbed the function of targeting poor households for all social protection programs through its Household Targeting System (SISFOH for its Spanish acronym). SISFOH generated a new targeting algorithm, the *Índice de Focalización de Hogares* (IFH), that MIDIS began to utilize in late 2012.

In general, the variables used for calculating the IFH are similar to those used for calculating the 2005-2011 poverty score. There were some changes in the markers of education: adult illiteracy and child school attendance were no longer taken into consideration and were replaced by educational attainment of the household head in the computation of the algorithm. Also, health insurance of household members was added to the array of household characteristics used in the computation of the algorithm. The number of appliances, access to basic services, and the materials used for constructing the

house, were kept unaltered for the calculation of the IFH. The major differences between these algorithms come from a change in the variables' weights and the introduction of cutoff values specific to geographical areas for determining the eligibility condition.

In Appendix Figure A.2 we show the share of households according to the predicted poverty scores calculated based on household characteristics from the DHS, following the 2005-2011 algorithm (Panel A) and the IFH algorithm (Panel B). We have included the eligibility cutoff values in both graphs: 0.7567 for the poverty score calculated based on the algorithm used between 2005 and 2011 and 0 for the one calculated based on the algorithm used from 2012 onwards. Eligible households are those to the right of the cutoff value in the graph in Panel A and those to the left of the cutoff value in the graph in Panel B. There is a discontinuous increase in the share of households enrolled in JUNTOS on the sides of the graphs that correspond to the eligible population. This provides evidence that, albeit imperfect, the poverty score is a good predictor of program participation.

Appendix Figure A.2: JUNTOS Eligibility and Enrolment

(A) Poverty Score: 2005-2011　　　　　(B) Poverty Score: 2012-onwards
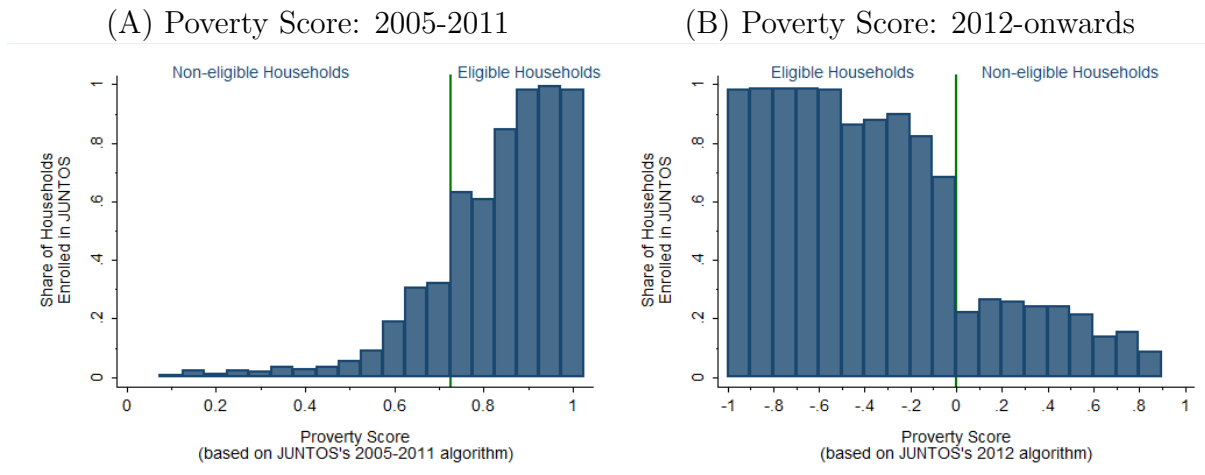
Note: The figure shows the share of households enrolled in JUNTOS according to the poverty score calculated with the algorithm used between 2005-2011 (Panel A) and the algorithm used from 2012 onwards (Panel B). The vertical lines are the eligibility cutoff values in each period. Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

A.3. Distribution of the Normalized Poverty Score

For empirical purposes, we compute a normalized poverty score around the eligibility cutoff value, taking into account the survey year. The negative values of the normalized poverty score indicate households that are non-eligible for program participation while the non-negative values indicate households that are eligible for program participation.

In Appendix Figure A.3, we plot the distribution of the normalized poverty score. In Panel A, we plot the distribution of the normalized poverty score for all households in our sample of rural municipalities. In Panel B, we break down the distribution according to the exposure to JUNTOS. The figure shows that a larger fraction of rural households

are non-eligible for program participation. However, the majority of rural households are located within the vicinity of ± 0.2 around units the eligibility cutoff value. We do not find major differences when we split the distribution of the normalized poverty score according to the exposure to JUNTOS. This is reassuring as it shows that eligibility is not correlated with exposure to the program.

Appendix Figure A.3: Distribution of the Normalized Poverty Score

(A) All Households	(B) By Exposure to JUNTOS

Note: The figure shows the distribution of the normalized poverty score for all rural households (Panel A), and for households exposed and not exposed to JUNTOS (Panel B). The normalized poverty score is obtained by rescaling the household's poverty score around the eligibility cutoff value, taking into account the survey year (2005-2011 or 2012-2015). The vertical lines are the eligibility cutoff values.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

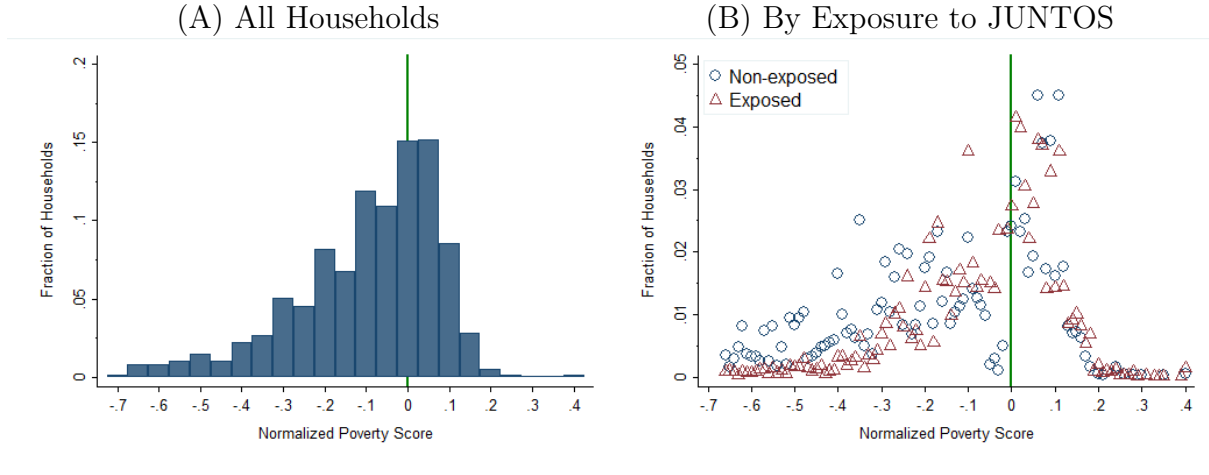# B. Data Construction and Cleaning Procedure

In this appendix, we provide further information on our sample selection procedure. We first describe how we construct our principal dataset from the Peruvian DHS. Next, we describe our criteria for selecting municipalities in our sample. Finally, we review our individual-level filtering procedure.

B.1. Dataset Construction

To construct our principal dataset, we bring together individual-level information from the Peruvian DHS and JUNTOS's administrative records on paydays at the municipality level. The former provides information on the experience of physical IPV as well as socio-demographic characteristics of women of reproductive age (15-49 years) whereas the latter provides information on the date when JUNTOS was deployed in a given municipality.

We begin the construction of our principal dataset by putting together repeated annual cross-sections from the DHS over the period 2005-2015. The DHS is a publicly available,

nationwide representative sample of Peruvian households that is conducted on an annual basis since the year 2004 to provide information about reproductive as well as maternal and infant health that is useful for the design and implementation of health-related public policies. Since the beginning of its implementation in the year 1986, the INEI has been the institution in charge of conducting the DHS.

Once we have assembled our dataset from the 2005-2015 Peruvian DHS, we retrieve information on paydays for each municipality from JUNTOS's administrative records. The resulting dataset contains 195,931 records from 1,391 municipalities. Not all the observations in this dataset, though, contain information on paydays since JUNTOS has been deployed only in selected municipalities, as explained in Appendix A. In the next sub-section, we describe with further detail our geographical filtering procedure.

B.2. Municipality-level Filtering Procedure

The first step of the data filtering procedure consists of restricting the sample to include only rural municipalities where JUNTOS was deployed between 2005 and 2012. In Appendix Table B.1 we describe this procedure in detail. We depart from the 1,391 municipalities that were part of the DHS sampling frame over the period 2005-2015 (row A). From these, 1,165 are rural municipalities (row B). Finally, we keep municipalities where JUNTOS was deployed over the period 2005-2012, which leaves us with 770 municipalities and a total of 40,089 individual-level observations (row C).

It is worth mentioning that not all the municipalities in our final sample were part of the DHS sampling frame of two different years. Some of these municipalities appear only in one year while others appear more than once over the period 2005-2015. For the vast majority of municipalities, however, we have individual-level observations both before and after the program deployment.

Table B.1: Geographical Filtering Procedure

Level:		Municipalities		Women	
Measure:		N	%	N	%
(A)	All municipalities	1,391	-	195,931	-
(B)	Rural municipalities	1,165	100.00	62,978	100.00
(C)	JUNTOS rural municipalities	770	66.09	40,089	63.66

Note: The table provides details on the geographical filtering procedure and quantifies the data loss as we progressively restrict our sample to keep rural municipalities where JUNTOS was deployed between 2005 and 2012. The figures shown in row (C) are calculated relative to the overall number of rural municipalities and individual-level observations described in row (B).
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

B.3. Individual-level Filtering Procedure

In Appendix Table B.2 we describe our individual-level filtering procedure. Our data from rural municipalities where JUNTOS was deployed between 2005 and 2012 contain

a total of 40,089 women of reproductive age (row A). Out of this total, 31,101 women have ever been in a relationship and thus are eligible for responding to the DHS domestic violence (DV) questionnaire (row B). A total of 26,736 women were selected at random to complete the DV questionnaire (row C), and 26,687 ended up filling it (row D). As can be inferred from these numbers, nonresponse rates are very low and the main reason for data loss up until this point is because privacy was not ensured. Next, we keep all women who, on top of responding to the DV questionnaire, belong to the JUNTOS's target population (row E). This leaves us with a total of 25,169 women: 16,995 non-eligible and 8,174 eligible for program participation. The data loss rates at this point are similar across both groups of women.

We further keep women who are married or cohabiting and living with their partner (column F). Moreover, given that only the female household head is entitled to the benefit stipend, we keep in our sample women who report being household heads or spouses of the household head only (column G). Also, to avoid retaining temporary migrants, we keep in our sample women who have been living in the municipality for at least 5 years before the survey date (column H). Finally, to ensure balance in socio-demographic characteristics, we keep in our sample women who belong to the poorest 90% according to the program's poverty score. All in all, we are left with 18,355 women of which 12,141 are non-eligible and 6,214 are eligible for program participation.

Table B.2: Individual Filtering Procedure

| Level: | | Municipalities | | Women | | | |
| Category: | | All | | Non-Eligibles | | Eligibles | |
Measure:		N	%	N	%	N	%
(A)	JUNTOS rural municipalities	770	100.00	27,026	-	13,063	-
(B)	Ever in a relationship	770	100.00	21,223	-	9,878	-
(C)	Selected for responding the DV questionnaire	770	100.00	18,118	100.00	8,618	100.00
(D)	Responded the DV questionnaire	770	100.00	18,085	99.82	8,602	99.81
(E)	JUNTOS's target population	770	100.00	16,995	93.80	8,174	94.85
(F)	Married/cohabiting and living with partner	770	100.00	15,156	83.65	7,066	81.99
(G)	Household head or spouse of household head	770	100.00	15,070	83.18	7,015	81.40
(H)	Living in the municipality for at least 5 years	770	100.00	12,701	70.10	6,214	72.10
(I)	Poorest 90 percent	770	100.00	12,141	67.01	6,214	72.10

Note: The table provides details on the sampling filtering procedure and quantifies the data loss as we progressively restrict our sample to keep women of reproductive ages (15-49 years), who live in rural municipalities, who were selected and responded the DHS module specific to spousal abuse, who belong to the JUNTOS's target population (pregnant women or women with children ages 14 or younger), who are married/cohabiting and living with their partners, who have been living in the municipality for at least 5 years, who are the household heads or spouses of the household head, and who belong to the poorest 90% according to the program's poverty score. In rows (D) through (I) we show the number of observations remaining after each of the implied cleaning steps relative to the initial number of observations described in row (C).

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

C. Balance in Socio-demographic Characteristics

In this appendix, we present descriptive statistics of socio-demographic characteristics of women observed during the pre-implementation period, and the trends of these characteristics according to the eligibility condition and the timing of exposure to JUNTOS. We also discuss the empirical implications of potential imbalances in these characteristics through the lens of the difference-in-differences approaches that we follow throughout the empirical analysis.

C.1. Balance in Pre-implementation Trends

In Appendix Table C.1, we present descriptive statistics of socio-demographic characteristics of eligible (Panel A) and non-eligible (Panel B) women observed during the pre-implementation years (columns 1 through 6). We also present descriptive statistics of the difference in pre-implementation trends of these characteristics according to the timing of exposure to JUNTOS (columns 7 through 9). The timing of exposure to JUNTOS is defined based on the year of program arrival: (i) early exposure (2005-2006); (ii) mid exposure (2007-2010); and (iii) late exposure (2011-2012). Pre-implementation trends are calculated by subtracting the means of the year 2004 from those of the year 2005.

Focusing on eligible women, we find a noticeable difference in pre-implementation trends in socio-demographic characteristics when we compare women who live in early- versus mid-exposed municipalities. The differences in pre-implementation trends prevail when we compare women in early- versus late-exposed municipalities. However, there are no apparent differences in pre-implementation trends when we compare women in mid-versus late-exposed municipalities. This picture changes when we focus on non-eligible women. Except for the fact that there are differences in pre-implementation trends in women's ethnicity across different municipalities, in general, we do not find that the characteristics of non-eligible women changed differently when we compare early- versus mid- versus late-exposed municipalities.

In Appendix Table C.2 we present descriptive statistics of pre-implementation trends in socio-demographic characteristics of eligible and non-eligible women (columns 1 through 6) and differences in pre-implementation trends between these two groups (columns 7 through 9) according to the timing of exposure to JUNTOS. Once we subtract the pre-implementation trends of non-eligible women from those of eligible women and perform the comparisons between municipalities exposed in different years, we do not find differences in pre-implementation trends. We, therefore, achieve balance in pre-implementation trends in socio-demographic characteristics when we use non-eligible women as a comparison group for eligible women.

C.2. Implications for the Difference-in-differences Approach

If trends in pre-treatment characteristics that are correlated with the treatment and with the outcome dynamics are observed, then estimates obtained from a difference-in-differences regression specification are biased. The reason is that the treatment is correlated with potentially unobserved, individual-specific components that may determine the outcome. Thus, estimates from a double-differences approach would be picking up both the program-specific effects and the individual-specific components.

In our context, imbalances in trends in pre-implementation characteristics of eligible women who live in early- and late-exposed municipalities can introduce bias in estimates of $\ddot{\beta}_1$ from equation (5) in the main text because they would contain both the program effects and the bias introduced by the municipality-specific components. Even more, given the cross-sectional nature of our data, this would be the case even if we control for such characteristics in the regressions because we cannot account for individually pre-determined attributes (Meyer 1995; Abadie 2005). An alternative way to proceed would be to find a group with similar trends in pre-implementation characteristics that is unaffected by the program to purge such municipality-specific components. This is the spirit of the differences-in-differences approach from equation (1) in the main text.

Appendix Table C.1: Balance in Pre-implementation Trends According to the Timing of Exposure to JUNTOS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Early Exposure (2005-2006)		Mid Exposure (2007-2010)		Late Exposure (2011-2012)		Difference in Pre-implementation Trends		
	2004	2005	2004	2005	2004	2005	Early vs. Mid	Early vs. Late	Mid vs. Late
Panel A: Eligible Women									
Woman's age	35.71	35.60	35.64	33.24	33.63	33.57	-2.20**	-1.48**	0.62
Woman's schooling	2.98	2.71	2.60	3.94	3.93	4.49	1.17***	0.80**	-0.38
Woman's ethnicity (Spanish as mother tongue)	0.13	0.23	0.51	0.60	0.59	0.65	0.00	-0.11**	-0.11**
Woman is pregnant	0.09	0.10	0.05	0.06	0.10	0.11	-0.02	-0.01	0.01
Duration of the relationship	16.53	16.58	15.63	14.43	15.26	14.40	-1.92**	-2.06*	-0.21
Partner's age	39.28	39.23	38.85	37.95	38.57	37.38	-1.05	-2.18*	-1.20
Partner's schooling (years)	5.54	5.01	4.44	5.75	5.73	6.24	0.86**	0.95**	0.08
N	182	163	306	338	212	119	989	676	975
Panel B: Non-eligible Women									
Woman's age	31.86	32.82	36.24	34.97	33.78	34.23	1.41	0.06	-1.24
Woman's schooling	5.44	5.36	4.47	5.84	6.34	5.94	1.20	0.58	-0.43
Woman's ethnicity (Spanish as mother tongue)	0.40	0.63	1.00	0.84	0.77	0.63	0.15*	-0.18**	-0.30***
Woman is pregnant	0.06	0.05	0.06	0.04	0.06	0.04	-0.07	-0.04	0.02
Duration of the relationship	12.84	14.03	15.71	15.40	14.81	14.93	0.66	-0.47	-1.02
Partner's age	34.92	36.4	41.94	38.83	38.10	38.91	1.19	1.24	0.41
Partner's schooling (years)	8.11	7.51	6.29	7.72	7.98	7.70	0.98	0.98	0.14
N	163	195	182	274	165	162	814	685	783

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. The table shows descriptive statistics of socio-demographic characteristics of eligible (Panel A) and non-eligible (Panel B) women observed during the pre-implementation years (columns 1 through 6), and the differences in pre-implementation trends according to the timing of exposure to JUNTOS (columns 7 through 9). Differences in pre-implementation trends are calculated by subtracting the means of the year 2004 from those of the year 2005.

Source: Authors' calculations using data from the 2004-2005 Peruvian Demographic and Health Surveys (DHS).

Appendix Table C.2: Balance in Pre-implementation Trends Between Treatment Groups According to the Timing of Exposure to JUNTOS

	(1) Early Exposure (2005-2006)	(2)	(3) Mid Exposure (2007-2010)	(4)	(5) Late Exposure (2011-2012)	(6)	(7) Difference in Pre-implementation Trends	(8)	(9)
	NE [a]	E [b]	NE	E	NE	E	Early vs. Mid	Early vs. Late	Mid vs. Late
Woman's age	0.96	-0.12	-1.26	-2.40	0.45	-0.06	-1.08	-1.13	-0.51
Woman's schooling	-0.09	-0.28	1.37	1.34	-0.40	0.55	-0.19	-0.02	0.95
Woman's ethnicity (Spanish as mother tongue)	0.23	0.10	-0.16	0.09	-0.14	0.05	-0.14	0.25*	0.19*
Woman is pregnant	-0.01	0.01	-0.02	0.01	-0.02	0.01	0.02	0.03	0.03
Duration of the relationship	1.19	0.06	-0.30	-1.20	0.12	-0.86	-1.13	-0.89	-0.98
Partner's age	1.48	-0.05	-3.11	-0.91	0.80	-1.19	-1.53	2.20	-2.00
Partner's schooling (years)	-0.61	-0.54	1.43	1.31	-0.28	0.52	0.07	-0.12	0.80
N	358	345	456	644	327	331	1,803	1,361	1,758

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. The table shows descriptive statistics of pre-implementation trends of socio-demographic characteristics of eligible and non-eligible women (columns 1 through 6), and differences in pre-implementation trends between eligible and non-eligible women according to the timing of exposure to JUNTOS (columns 7 through 9).

Source: Authors' calculations using data from the 2004-2005 Peruvian Demographic and Health Surveys (DHS).

a\. NE: Non-eligible women.

b\. E: Eligible women.

D. Sensitivity Analysis

In this appendix, we test for the sensitivity of our main results to our sampling filtering criteria. We discuss the rationale of each of these data filters and show that our results are not conditioned by any of these.

D.1. All Women

Our empirical sample includes only female household heads or spouses of the household head. This restriction is made because we do not observe who is the principal beneficiary woman in the household, so we assume that only female household heads can be entitled to receive the cash transfer. In Appendix Table D.1 we present estimates of β_1 from different specifications of equation (1) in the main text when we include all women in our sample, regardless of whether they are the female household heads or not. The estimates are similar to those presented in Table 3 of the main text. We find that the prevalence of physical IPV declined by about 3.4 percentage points (28% relative to the pre-implementation mean) after the introduction of JUNTOS.

Appendix Table D.1: Sensitivity Analysis (All Women)

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	Woman Experienced Physical IPV				
	(Pre-implementation Mean: 0.123)				
Eligible × Exposed to JUNTOS	-0.031**	-0.031**	-0.031**	-0.035**	-0.034**
	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)
N	18,391	18,391	18,391	18,391	18,391
Number of clusters	770	770	770	770	770
R-squared	0.074	0.076	0.081	0.091	0.118
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different specifications based on equation (1) in section 4 of the main text. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, and who belong to the poorest 90% according to the program's poverty score. Further details of each specification are described within the table.

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

D.2. Migration Status

Our empirical sample includes women who have been living in the municipality for at least five years before the DHS survey date. This restriction is made to keep only non-migrant women in our empirical sample. We change this filtering criterion and keep only women who have been living in the municipality for at least 1 year before JUNTOS was deployed there. We present estimates of β_1 from different specifications based on equation (1) in the main text in Appendix Table D.2. We find smaller estimates relative to those presented in Table 3 of the main text. The point estimates range between -0.028 and -0.030, indicating that the prevalence of physical IPV declined by roughly 3 percentage points (23% relative to the pre-implementation mean) after the introduction of JUNTOS.

Appendix Table D.2: Sensitivity Analysis (Migration Status)

Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Woman Experienced Physical IPV				
	(Pre-implementation Mean: 0.133)				
Eligible × Exposed to JUNTOS	-0.028*	-0.028**	-0.028**	-0.031**	-0.030**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)
N	19,096	19,096	19,096	19,096	19,096
Number of clusters	770	770	770	770	770
R-squared	0.072	0.074	0.079	0.089	0.116
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different specifications based on equation (1) in section 4 of the main text. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who belong to the target population of JUNTOS (pregnant women or women with children ages 14 or younger), who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least one year before JUNTOS was deployed there, who live in municipalities where JUNTOS had been deployed up until the year 2012, and who belong to the poorest 90% according to the program's poverty score. Further details of each specification are described within the table.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

D.3. Non-targeted Women

Our empirical sample is composed of women who are part of the JUNTOS's target population. It is possible, though, that some women who were not part of the target population the year the DHS surveyed them became part of it at a later time on the census. However, the cross-sectional structure of our data does not permit us to assess the extent of this problem.

From Appendix Table B.2, we know that a total of 1,518 women do not meet the targeting criterion at the time of the DHS survey: 1,090 in the non-eligible group and 428 in the eligible group. To determine how many of these women could be part of our empirical sample, we reconstruct our empirical sample by relaxing the targeting criterion but applying all the other filters to the data. We end up with a total of 945 women that do not meet the targeting criterion: 684 in the non-eligible group and 261 in the eligible group.

Next, we assess whether including these 945 women in our empirical sample could affect our principal results. We present estimates of β_1 from different specifications based on equation (1) in the main text in Appendix Table D.3. The point estimates are very similar to those reported in Table 3 of the main text, indicating a decline in the prevalence of physical IPV of around 3 percentage points (25% relative to the pre-implementation mean) after the introduction of JUNTOS.

Appendix Table D.3: Sensitivity Analysis (Non-targeted Women)

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:			Woman Experienced Physical IPV		
			(Pre-implementation Mean: 0.128)		
Eligible x Exposed to JUNTOS	-0.029**	-0.029**	-0.029**	-0.032**	-0.031**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
N	19,300	19,300	19,300	19,300	19,300
Clusters	770	770	770	770	770
R-squared	0.072	0.074	0.079	0.088	0.114
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different specifications based on equation (1) in section 4 of the main text. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. The sample includes women ages 15-49, who live in rural areas, who are married or cohabiting and living with their partners, who are the household heads or spouses of the household head, who have been living in the municipality for at least five years, who live in municipalities where JUNTOS had been deployed up until the year 2012, and who belong to the poorest 90% according to the program's poverty score. Further details of each specification are described within the table.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

E. Characterization of Physical IPV

In this appendix, we decompose the estimates of the effect of JUNTOS on physical IPV according to the severity of the physically violent act and present estimates of the effects of JUNTOS on the probability of having physical trauma from the abuse.

E.1. Severity of Physical IPV

We begin by characterizing physical IPV according to the severity of the act. We follow Bott et al. (2012) and construct indicators for a woman's experience of moderate and/or severe acts of physical IPV during the past twelve months. The former includes the experience of violent acts such as being pushed/shook, slapped, punched, or kicked/dragged. The latter includes the experience of violent acts such as being choked/burnt, threatened with a knife/gun, or attacked with a knife/gun.[1] Besides, we exploit the information on the frequency of physically violent acts and construct indicators for a woman's experience of frequent moderate and/or severe acts of physical IPV; these indicators take the value of 1 if the woman reported that during the past twelve months she experienced any "frequent" act of moderate/severe physical IPV.

In Appendix Table E.1, we present estimates of β_1 from our most comprehensive specification based on equation (1) in the main text, where the dependent variables in the regressions are indicators for moderate acts oh physical IPV. We find negative effects of JUNTOS on the probability of experiencing acts such as being punched or kicked/dragged. Although the point estimates are negative for the case of being pushed/shook or slapped, suggesting a decrease in the probability of experiencing such acts, these are imprecisely estimated. Overall, we find a decline of 3.5 percentage points or around 28% relative to the pre-implementation mean in the probability a woman experiences moderate physical IPV after the introduction of JUNTOS. We also find a similar decline in the probability a woman experiences frequent events of moderate physical IPV after the introduction of JUNTOS. These results indicate that not only the probability of experiencing moderate physical IPV but also the frequency with which a woman experiences such abusive acts declined after the introduction of JUNTOS.

In Appendix Table E.2, we present the same set of estimates when the dependent variables in the regressions are indicators for severe acts of physical IPV. In general, we do not find effects of JUNTOS on the probability a woman experiences severe physical IPV, in any of its forms, after the introduction of JUNTOS.

In Appendix Figure E.1, we present parametric event study estimates of the effect of JUNTOS on moderate (Panels A and C) and severe (Panels B and D) acts of physical IPV. In the top panels, we plot estimates of γ_τ from equation (2) and, in the bottom panels, we plot estimates of φ_g from equation (3) in the main text. The results confirm our previous findings: JUNTOS only affects negatively the probability a woman experiences moderate acts of physical IPV. Reassuringly, we find that these effects are negative and statistically significant during the post-intervention period and among program-eligible women only. Based on the F-tests of joint significance, we cannot reject the null hypotheses that the pre-intervention/non-eligibility effects are jointly equal to zero.

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[1]This classification follows from the idea of ranking a physically violent act according to its likelihood of causing physical injuries to the victim (Garcia-Moreno et al. 2005).

Appendix Table E.1: Effects of JUNTOS on Moderate Physical IPV

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Specific Acts of Moderate P-IPV					Frequent
	Pushed/ Shook	Slapped	Punched	Kicked/ Dragged	Moderate P-IPV	Moderate P-IPV
Eligible × Exposed to JUNTOS	-0.021	-0.016	-0.023*	-0.025**	-0.035**	-0.032**
	(0.013)	(0.013)	(0.013)	(0.011)	(0.015)	(0.015)
N	18,355	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770	770
R-squared	0.115	0.105	0.110	0.107	0.119	0.115
Pre-implementation mean	0.106	0.053	0.060	0.050	0.123	0.120

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 based on different regressions from equation (1) in section 4 of the main text. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed during the year 2005. Clustered standard errors at the municipality level are reported in parentheses. All the regressions include woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as conditioning variables. See the notes in Table 1 and the main text for information about the sample composition. Further details of each regression are provided within the table.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Appendix Table E.2: Effects of JUNTOS on Severe Physical IPV

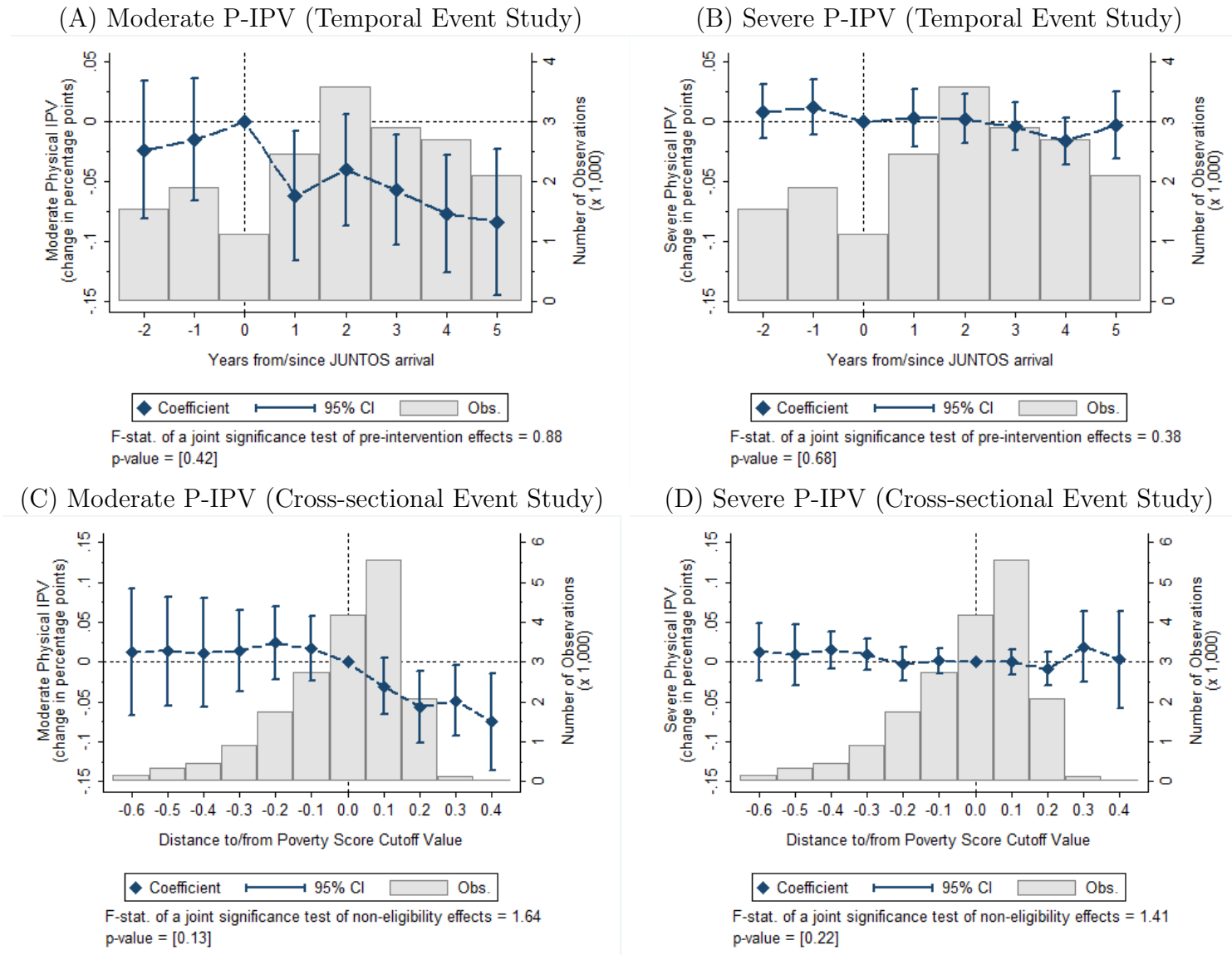| Dependent Variable:	(1)	(2)	(3)	(4)	(5)
	Specific Acts of Severe P-IPV				Frequent
	Choked/ Burnt	Threatened w./ gun	Attacked w./ gun	Severe P-IPV	Severe P-IPV
Eligible × Exposed to JUNTOS	-0.004	-0.006	-0.003	-0.011	-0.008
	(0.006)	(0.005)	(0.003)	(0.007)	(0.007)
N	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770
R-squared	0.085	0.089	0.082	0.095	0.092
Pre-implementation mean	0.007	0.003	0.002	0.007	0.007

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 based on different regressions from equation (1) in section 4 of the main text. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed during the year 2005. Clustered standard errors at the municipality level are reported in parentheses. All the regressions include woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as conditioning variables. See the notes on Table 1 and the main text for information about the sample composition. Further details of each regression are provided within the table.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

Appendix Figure E.1: Event Study Estimates of the Effect of JUNTOS on Moderate and Severe Physical IPV

(A) Moderate P-IPV (Temporal Event Study)

(B) Severe P-IPV (Temporal Event Study)

F-stat. of a joint significance test of pre-intervention effects = 0.88
p-value = [0.42]

F-stat. of a joint significance test of pre-intervention effects = 0.38
p-value = [0.68]

(C) Moderate P-IPV (Cross-sectional Event Study)

(D) Severe P-IPV (Cross-sectional Event Study)

F-stat. of a joint significance test of non-eligibility effects = 1.64
p-value = [0.13]

F-stat. of a joint significance test of non-eligibility effects = 1.41
p-value = [0.22]

<u>Note</u>: The figure shows estimates of γ_τ (Panels A and B) and φ_g (Panels C and D), along with their 95% confidence intervals and the number of observations within each group, from equations (2) and (3) in section 4 of the main text respectively. The dependent variables are indicators for whether the woman experienced moderate (Panels A and C) and severe (Panels B and D) physical IPV during the twelve months before the survey date. In each graph, the left axis measures the change (in percentage points) in the dependent variable and the right axis measures the number of observations within each group indicated in the horizontal axis. The F-statistics of joint significance tests of pre-intervention/non-eligibility effects, along with their associated p-values (in brackets), are reported at the bottom of each graph.

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

E.2. Physical Trauma from the Abuse

We further explore whether the decline in the prevalence of physical IPV that we observe after the introduction of JUNTOS also leads to a decline in the probability that women experience physical trauma from the abuse. To this end, we construct an aggregate indicator for the experience of physical trauma from the abuse that takes the value of 1 if the woman reported that, as a consequence of experiencing physical IPV during the past twelve months, she: had bruises/lesions; had sprains or broken bones/teeth; or required medical assistance. This indicator differs from those that measure the severity of the physically violent acts from the previous section in that it captures actual injuries/physical sequelae from the abuse instead of the likelihood or intention of causing injuries.

In Appendix Table E.3, we present estimates of β_1 from our most comprehensive specification based on equation (1) in the main text, where the dependent variables are indicators for experiencing physical trauma from the abuse. Although the point estimates are negative, none of these are statistically significant. These results indicate that JUNTOS did not reduce the probability of experiencing physical trauma from the abuse which is consistent with the previous finding that the program only affected the probability of experiencing moderate (but not severe) acts of physical IPV.

Appendix Table E.3: Effects of JUNTOS on Physical Trauma from the Abuse

Dependent Variable:	(1)	(2)	(3)	(4)
	Consequences of P-IPV			
	Bruises/ Lesions	Broken Bones/ Teeth	Required Medical Attention	Physical Trauma
Eligible × Exposed to JUNTOS	-0.022	-0.004	-0.014	-0.021
	(0.020)	(0.010)	(0.010)	(0.020)
N	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770
R-squared	0.168	0.109	0.120	0.169
Pre-implementation mean	0.249	0.043	0.050	0.259

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 based on different regressions from equation (1) in section 4 of the main text. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed during the year 2005. Clustered standard errors at the municipality level are reported in parentheses. All the regressions include woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as conditioning variables. See the notes on Table 1 and the main text for information about the sample composition. Further details of each regression are provided within the table. Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

F. Additional Robustness Analysis

In this appendix, we present additional analysis supporting the robustness of the estimates from our principal difference-in-differences specification from equation (1) in the main text.

F.1. Pre-determined Outcomes

We begin by exploring whether the decline in the prevalence of physical IPV observed after the introduction of JUNTOS is driven by a sub-group of eligible women who experienced past physical abuse. If the program eligibility is correlated with past experiences of physical abuse that can determine the current experience of physical IPV, then this would become apparent in estimates of β_1 from equation (1) in the main text when the dependent variables in the regressions are pre-determined outcomes (past experiences) of physical abuse. In Appendix Table F.1, we present the results of this analysis. For concreteness, we focus on our most comprehensive specification of equation (1) in the main text. We do not find statistically significant effects of JUNTOS on past experiences of physical abuse, which suggest that eligible women did not suffer from a disproportionately higher past abuse relative to their non-eligible counterparts.

Appendix Table F.1: Additional Robustness Analysis (Pre-determined Outcomes)

Dependent Variable:	(1) Inter-parental Violence	(2) Suffered Corporal Punishment	(3) Past Physical IPV
Eligible × Exposed to JUNTOS	-0.008	-0.012	-0.009
	(0.025)	(0.009)	(0.007)
N	18,355	13,056	18,355
Number of clusters	770	705	770
R-squared	0.141	0.151	0.111
Pre-implementation mean	0.419	0.728	0.013

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 based on different regressions from equation (1) in section 4 of the main text. The dependent variable of each regression is listed at the top of the column. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed during the year 2005, except for the outcome in column 2 whose pre-implementation mean corresponds to that of non-eligible women observed during the pre-intervention period in the municipality. Clustered standard errors at the municipality level are reported in parentheses. All the regressions include woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as conditioning variables. See the notes in Table 1 and the main text for information about the sample composition. The sample size in column 2 is smaller because the question on the experience of corporal punishment during childhood was introduced in the year 2010. Further details of each regression are provided within the table.

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

F.2. Sample Inclusion Criteria for Non-eligible Women

Next, we explore whether our results are sensitive to imbalances in unobserved characteristics between eligible and non-eligible women. We do so by applying additional sampling filters to the sub-group of non-eligible women to make our treatment and comparison groups more similar to one another. Specifically, we progressively restrict the sample to include non-eligible women above a certain poverty score value. This way, we gradually keep in our empirical sample non-eligible women whose poverty score is closer to the eligibility cutoff value.

In Appendix Table F.2, we present the estimates of β_1 from our most comprehensive specification of equation (1) in the main text for each of the restricted samples. In column 1, we replicate the result from column 5 in Table 3 of the main text. In columns 2 through 5, we progressively restrict the sample to include women above a certain poverty score value, going from -0.65 to -0.50 in steps of 0.05 units. In all specifications, we find similar results, and we cannot reject the null hypothesis that the estimated coefficients are statistically equal to our main estimate of $\hat{\beta}_1 = $ -0.033.

Appendix Table F.2: Additional Robustness Analysis
(Sample Inclusion Criteria for Non-eligible Women)

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:		Woman Experienced Physical IPV			
Eligible × Exposed to JUNTOS	-0.033**	-0.033**	-0.033**	-0.032**	-0.030*
	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
N	18,355	18,328	18,182	18,032	17,840
Number of clusters	770	770	770	770	770
R-squared	0.119	0.119	0.119	0.120	0.122
Pre-implementation mean	0.123	0.123	0.120	0.124	0.129
F-stat. ($H_0 : \hat{\beta}_1 = $ -0.033)	-	0.001	0.001	0.003	0.030
p-value	-	[0.999]	[0.998]	[0.955]	[0.862]
Sample restrictions (poverty score)	None	≥-0.65	≥-0.60	≥-0.55	≥-0.50

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column shows an estimate of β_1 from different specifications of equation (1) in section 4 of the main text. The dependent variable is an indicator for whether the woman experienced physical IPV during the twelve months before the survey date. The pre-implementation mean of the dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. All the regressions include woman characteristics, marital/relationship characteristics, municipality fixed effects, year fixed effects, and municipality linear trends as conditioning variables. See the notes in Table 1 and the main text for information about the sample composition. In columns 2 through 5, the sample is further restricted to include non-eligible women whose households' poverty score lies above the value specified at the bottom of the table. Further details of each specification are described within the table.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

G. Other Forms of IPV

In the main text, we mainly analyze the effects of JUNTOS on physical IPV. In this appendix, we expand the results to include other forms of IPV.

G.1. Descriptive Statistics and Time Trends

In Appendix Figure G.1, we reproduce the English version of the DV questionnaire from the Peruvian DHS. Our indicators for sexual and emotional/psychological IPV are constructed from parts H-I of item 1005 and parts A-C of item 1004 respectively. In Appendix Table G.1, we show the sample means of the indicators for sexual and emotional/psychological IPV and each of their separate components. The descriptives show more pronounced declines in sexual and emotional/psychological IPV (and in each of their components) for eligible women relative to non-eligible women after the introduction of JUNTOS.

In Appendix Figure G.2, we plot trends in the prevalence of physical (Panel A), sexual (Panel B), and emotional/psychological (Panel C) IPV. We find that the prevalences of physical and sexual IPV of non-eligible and eligible women move parallel to one another during the pre-intervention period. Yet, this is not the case for emotional/psychological IPV. As is commonly known, divergent pre-existing trends in emotional/psychological IPV can compromise the interpretation of our exposure-by-eligibility difference-in-differences estimates as causal, unbiased estimates of the effect of JUNTOS on this outcome. Based on these descriptives, we take the results from the regressions on this outcome with caution.

Appendix Table G.1: Summary Statistics of Other Forms of IPV

	Non-eligibles		Eligibles	
	Not Exposed	Exposed	Not Exposed	Exposed
Sexual IPV				
Forced sexual intercourse	0.037	0.036	0.052	0.036
Unapproved sexual acts	0.022	0.020	0.024	0.016
Any sexual IPV	0.040	0.041	0.055	0.039
Emotional/psychological IPV				
Humiliated	0.105	0.102	0.113	0.087
Threatened with making harm	0.056	0.056	0.070	0.054
Threatened with abandonment	0.090	0.084	0.092	0.070
Any emotional/psychological IPV	0.154	0.144	0.158	0.125
Observations	2,874	9,267	1,715	4,499

Note: The table shows the sample means of the indicators for sexual and emotional/psychological IPV, and each of their separate components, experienced by women during the twelve months before the survey date. The sample means have been divided according to the program eligibility condition and the exposure to the program.
Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

## Appendix Figure G.1: The DHS Questionnaire on Domestic Violence

QUEST.	QUESTIONS AND FILTERS			CATEGORIES AND CODES			GO TO
1004	Now, if you allow me, I need to ask you some questions about your couple's relationship with you (last) (husband/partner). Did your (last) (husband/partner) ever:						
A	say or do something to humiliate you in front of others?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
B	threaten to hurt or harm you or someone you care about?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
C	threaten to leave home, take away your children, or take away financial aid?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
1005	Did your (last) (husband/partner) ever:						
A	push you, shake you, or throw something at you?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
B	slap you or twist your arm?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
C	punch you with his fist or with something that could hurt you?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
D	kick you or drag you?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
E	try to choke you or burn you?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
F	attack you with a knife, gun, or another weapon?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
G	threaten you with a knife, gun, or another weapon?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
H	physically force you to have sexual intercourse with him when you did not want to?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	
I	force you to perform sexual acts you do not approve of?	YES NO	1 → 2 ↓	How often in the previous 12 months?	Very often........ Sometimes........ Never..............	1 2 3	

Note: The figure shows the English version of the domestic violence questionnaire from the Peruvian Demographic and Health Surveys.
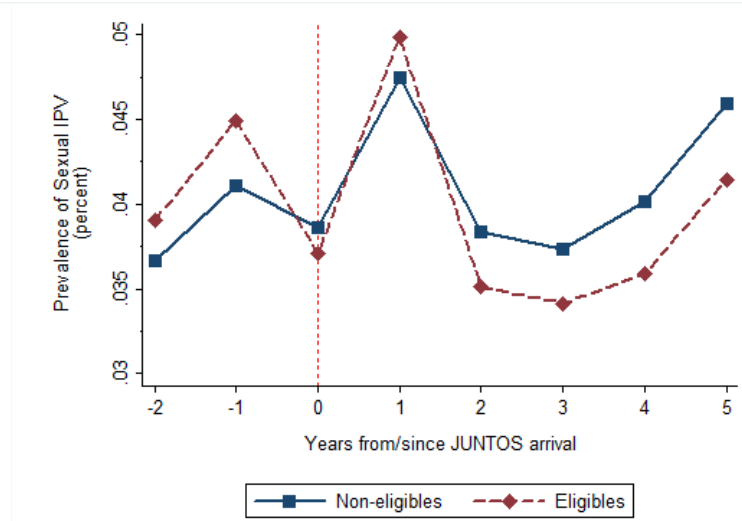Source: Authors' own translation of the Domestic Violence questionnaire from the Peruvian Demographic and Health Surveys (DHS).

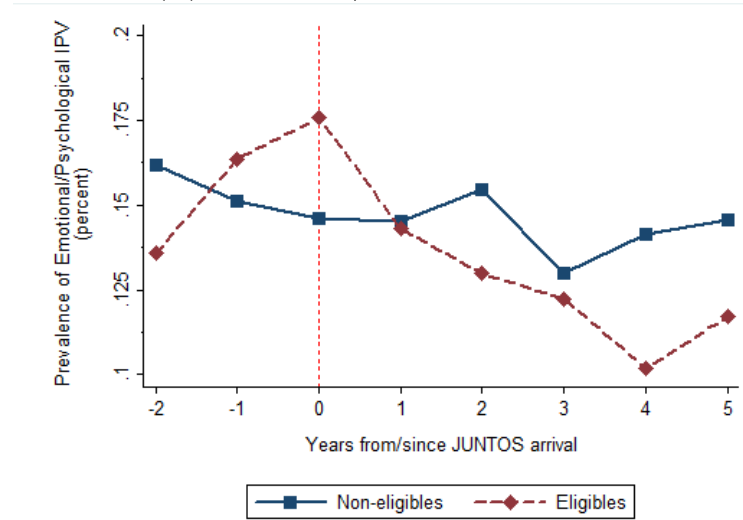## Appendix Figure G.2: Time Trends of Different Types of IPV

(A) Physical IPV
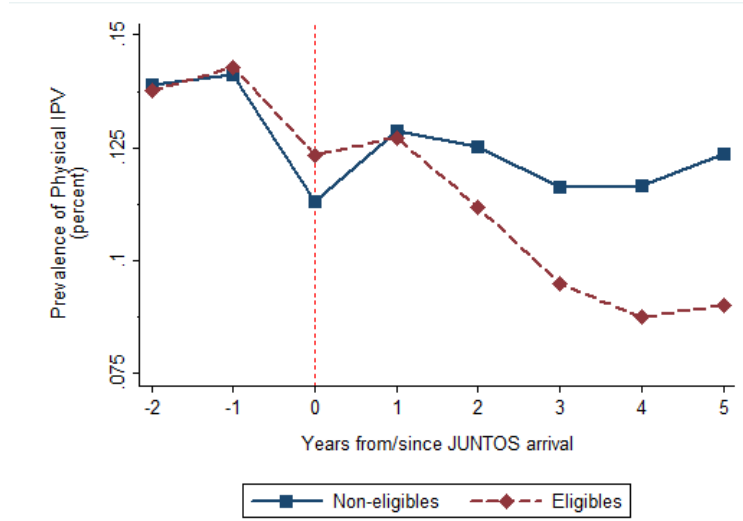
(B) Sexual IPV

(C) Emotional/Psychological IPV

Note: The figure shows time trends in physical (Panel A), sexual (Panel B), and emotional/psychological (Panel C) IPV. In all graphs, the survey date is expressed relative to the twelve months before the program arrival, so that the negative values on the horizontal axis correspond to women surveyed before and the positive values correspond to women surveyed after JUNTOS was deployed in the municipality.

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

G.3. Difference-in-differences Estimates

In Appendix Table G.2, we show estimates of β_1 from different specifications of equation (1) in the main text, where the dependent variables in the regressions are the indicator for sexual IPV (Panel A) and the indicator for emotional/psychological IPV (Panel B) experienced by the woman during the twelve months before the survey date.

We find declines in both sexual and emotional/psychological IPV for eligible women relative to their non-eligible counterparts after the introduction of JUNTOS, although the estimated effects on the latter are imprecise. For sexual IPV, we find effect sizes of 35-50 percent relative to the pre-implementation mean. We take the estimate of the effect of JUNTOS on emotional/psychological IPV with caution because of the diverging pre-existing trends discussed in the previous sub-section.

Appendix Table G.2: Effects of JUNTOS on Other Forms of IPV

	(1)	(2)	(3)	(4)	(5)
	Panel A: Sexual IPV				
	(Pre-implementation Mean: 0.043)				
Eligible × Exposed to JUNTOS	-0.014*	-0.015*	-0.015*	-0.014*	-0.019**
	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
N	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770
R-squared	0.057	0.059	0.059	0.067	0.094
	Panel B: Emotional/Psychological IPV				
	(Pre-implementation Mean: 0.133)				
Eligible × Exposed to JUNTOS	-0.017	-0.017	-0.016	-0.013	-0.012
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)
N	18,355	18,355	18,355	18,355	18,355
Number of clusters	770	770	770	770	770
R-squared	0.076	0.079	0.083	0.091	0.116
Individual controls	No	Yes	Yes	Yes	Yes
Marital/relationship controls	No	No	Yes	Yes	Yes
Province linear trends	No	No	No	Yes	No
Municipality linear trends	No	No	No	No	Yes

Note: ***, ** and * denote statistical significance at the 0.01, 0.05 and 0.10 levels respectively. Each column in each panel shows an estimate of β_1 from different specifications of equation (1) in section 4 of the main text. The dependent variables are indicators for whether the woman experienced sexual IPV (Panel A) and emotional/psychological IPV (Panel B) during the twelve months before the survey date. The pre-implementation mean of each dependent variable corresponds to that of non-eligible women observed in the year 2005. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. Further details of each specification are described within the table.

Source: Authors' calculations using data from the 2005-2015 Peruvian Demographic and Health Surveys (DHS).

H. Variable Construction: Channels of Impact

In Appendix Table H.1, we provide details on the construction of the outcomes used in the analysis of channels of impacts that we present in section 6 of the main text.

Appendix Table H.1: Variable Construction (Channels of Impact)

Variable	Construction
Decision-Making Autonomy	Indicator that takes the value of 1 if the woman participates (alone or together with her partner/other people) in any household decision-making on (i) health care; (ii) making large household purchases; (iii) making daily household purchases; (iv) visits to family or relatives; or (v) food to be cooked each day.
Justification of Wife-Beatings	Indicator that takes the value of 1 if the woman agrees that wife-beating is justified in any of the following cases: (i) if she goes out without telling her partner; (ii) if she neglects the children; (iii) if she argues with her partner; (iv) if she refuses to have sex with her partner; or (v) if she burns the food.
Paid Work	Indicator that takes the value of 1 if the woman was employed and received money for her work at some point during the past twelve months.
Earns More than Partner	Indicator that takes the value of 1 if the woman reported having equal or higher earnings than her partner from her work during the past twelve months.
Marital Control	Indicator that takes the value of 1 if the woman reports that her partner exhibits any of the following behaviors: (i) gets jealous if she talks with another man; (ii) accuses her of being unfaithful; (iii) does not allow her to meet her friends; (iv) tries to limit her contact with family; (v) insists on knowing where she is at all times; or (vi) does not trust her with money.
Emotional Support	Indicator that takes the value of 1 if the woman reports that her partner exhibits any of the following behaviors: (i) is tender or lovely with her; (ii) spends free time with her; (iii) considers her opinions; (iv) respects her wishes; or (v) respects her rights.
Frequent Alcohol Consumption	Indicator that takes the value of 1 if the woman reports that her partner drinks alcohol frequently.
Alcohol-related Aggression	Indicator that takes the value of 1 if the woman reports that at least one act of physical IPV perpetrated by her partner during the past twelve months occurred when he had drunk alcohol before.

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