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## Mitigating coercive parenting through home visitations: The impacts of a parenting program targeted at vulnerable communities in Jamaica

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Inter-American Development Bank  
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# Mitigating Coercive Parenting through Home Visitations: The Impacts of a Parenting Program Targeted at Vulnerable Communities in Jamaica

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## Abstract

Family violence is a critical development challenge in low- and middle-income countries (LMICs), carrying high health, social, and economic costs and increasing the risk of perpetuating the cycle of violence across generations. Parenting programs have improved parenting practices in high-income countries. However, evidence for LMICs is sparse. This study evaluates an intervention to reduce coercive parenting implemented by the Ministry of National Security of Jamaica, which targeted caregivers of children aged 6 to 15 in vulnerable communities in the country. Treated caregivers were visited by a parental trainer for six months and invited to three sessions of a group training workshop during that period. We conducted a randomized controlled trial (RCT) to evaluate the intervention's impact. Using data from a follow-up survey completed six months after the intervention, we find robust evidence of reduced coercive parenting practices among treated caregivers compared to the control group. The improvement is due to a reduction in the reported likelihood of caregivers yelling and beating their children for misbehaving. The effect is greater for caregivers with higher pre-intervention levels of coercive parenting. The results provide evidence that parenting interventions can effectively reduce coercive parenting among caregivers of school-aged children in highly violent middle-income settings.

Keywords: parenting, family violence, home visiting, randomized controlled trial, Jamaica, PAFAS, Alabama Parenting Questionnaire

JEL codes: J12, J13

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## 1. Introduction

Family and youth violence are central public health concerns in low and middle-income countries (WHO, 2015). According to the latest UNICEF (2017) report on child maltreatment, 75 percent of young children (aged 2 to 4 years old) regularly suffer physical or psychological violence from their caregivers. Current estimates indicate that the past-year prevalence of violence against children between 2 and 17 is over 50 percent (Hillis, 2016).

This study evaluates an intervention to reduce coercive parenting implemented by the Ministry of National Security of Jamaica, targeting caregivers of children aged 6 to 15 in vulnerable communities in the country. The high prevalence of violent parenting practices is problematic for several reasons. Exposure to violence at a young age correlates with various health problems—such as mental illnesses (Benjet, 2010; Kessler et al. 2010) and diabetes (Williamson et al., 2002)—and increases the risks of homelessness, criminal justice involvement, and unemployment (Doyle and Aizer, 2018). Furthermore, harsh parenting techniques foster the normalization of violence as a method for resolving disputes, including by men against women. This increases the likelihood that children will reproduce these practices in adulthood, thus perpetuating the intergenerational cycle of violence (Mendoza et al., 2014; Holt, Buckley and Whelan, 2008; Gage and Silvestre, 2010, Kimber et al. 2018, Logan et al., 2016; Heise, 2011).

Given the extent of the problem and its social costs, it is not surprising that the United Nation's Sustainable Development Goals (SDGs) recognize violence against children as a serious development challenge.<sup>1</sup> This problem is acute in Jamaica, one of the countries with the highest exposure of young children to violent disciplinary practices in the Latin American and Caribbean (LAC) region (UNICEF, 2017). 69 percent of Jamaican parents report using coercive discipline techniques, one in four women (25.2 percent) has experienced physical violence by a male partner, and 7.7 percent has been

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<sup>1</sup> The target 16.2 is to “end abuse, exploitation, trafficking and all forms of violence against and torture of children.” Other targets are indirectly related to the problem of violence against children: (i) Target 5.2: Eliminate all forms of violence against all women and girls in the public and private spheres, and (ii) Target 16.1 “Significantly reduce all forms of violence and related death rates everywhere”.

sexually abused by their male partner.<sup>2</sup> Recognizing these challenges and, more broadly, the threat posed by crime and violence in Jamaica, the Ministry of National Security of Jamaica (MNS) launched the Citizen Security and Justice Program (CSJP), a national crime prevention initiative targeting at-risk youth in 50 vulnerable communities across eight parishes in Jamaica.

One core component of the CSJP was a parenting intervention that sought to reduce coercive parenting practices among caregivers of school-aged (6 to 15 years) children. The intervention, focused on parents with a higher likelihood of engaging in coercive parenting practices, was aimed at nurturing their ability to engage in effective parenting strategies without coercion, as well as at supporting an overall reduction of these practices in the targeted communities. This initiative provided home visitations of a local parenting trainer and workshops in which social workers shared positive child-rearing practices with parents, guardians, and other caregivers. The intervention provided intensive and structured material based on the National Extension Parent Education model (NEPEM) and other validated parenting programs such as Triple P, The Incredible Years, and Programs H and M. The material was adapted for the Jamaican context in accordance with the Government of Jamaica's (GOJ) parenting framework.<sup>3</sup>

We conducted a randomized controlled trial (RCT) to evaluate the CSJP's parenting intervention impact on the prevalence of coercive parenting and on general parenting practices. We verify that, prior to the intervention, households in the treatment and the control group did not differ significantly, in terms of their main sociodemographic characteristics and parenting practices. This corroborates our study design and empirical strategy.

We find that the intervention led to a significant reduction in coercive parenting practices reported by caregivers in a follow-up survey conducted 6 months after completion of the intervention. The estimated intention-to-treat effect ranges from 0.28 to 0.45 standard deviations across different models, a

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<sup>2</sup> Statistical Institute of Jamaica, Inter-American Development Bank, and United Nations' Entity for Gender Equality and the Empowerment of Women' (2018). Women's Health Survey 2016 Jamaica. UN Women.

<sup>3</sup> The description of these programs is available at (accessed on October 7, 2021):

NEPEM: <https://www.k-state.edu/wwparent/nepem/>; Triple P: <https://www.triplep.net/global/home/>;

The Incredible Years: <https://incredibleyears.com/>

Program H: <https://promundoglobal.org/programs/program-h/>;

Program M: <https://promundoglobal.org/programs/program-m/>

medium-effect size, in the range of those estimated for parenting programs in other LMICs (McCoy et al., 2020). We observe that the improvement in coercive parenting practices was due to medium to large reductions in the caregiver's likelihood to yell and beat their children for misbehaving. We also observe that the intervention led to a (less-robust) improvement in positive encouragement practices (around 0.2 standard deviations). We do not find evidence of a significant impact of the intervention on other parenting practices surveyed (such as parental consistency, quality of the parent-child relationship, parental adjustment, or parental teamwork), which, while relevant, were not the main target of the intervention.

We assess the heterogeneous effects of the intervention by focusing on those families reporting the most dysfunctional parenting practices prior to the intervention. We find that improvements in coercive parenting and positive encouragement practices were greater in this group, a result which underscores the full potential of the intervention and can inform the targeting of similar initiatives.

We also examine follow-up information provided by children in the treatment and control groups. Large and differential attrition rates observed among children prevent us from obtaining robust conclusions from these data. However, consistent with the reduction in coercive parenting practices detected in caregivers' responses, we find that children in the treatment group reported less yelling and hitting with objects (arguably the most severe coercive practice measured) by their mothers than those in the control group.

This study contributes to the literature on the effectiveness of parenting interventions in reducing child maltreatment and coercive parenting practices, most of which has examined programs targeted to caregivers of young children (newborns to six years of age) in high-income countries. While relevant to identifying these programs' potential benefits, the evidence from these contexts is likely insufficient to assess their effectiveness in LMICs. Our study contributes to filling this gap, suggesting that parenting interventions may effectively reduce coercive parenting among caregivers of school-aged children in highly violent low- and middle-income settings.

The study is organized as follows. Section 2 presents a literature review on the evidence of the effectiveness of parenting programs in reducing violent parenting practices in different contexts. Section 3 describes the CSJP's



parenting intervention. Section 4 describes the data collection process, and the surveys used to evaluate the intervention. Section 5 presents the empirical strategy to evaluate the intervention's impact. Section 6 describes the impact evaluation results. Lastly, Section 7 provides a few final considerations and conclusions.

## **2. Literature Review: The Effects of Parenting Programs on Parenting Practices and Child Maltreatment**

There is extensive evidence of the positive impact parenting programs may have on parenting practices (Furlong et al., 2012) and child maltreatment prevention (Chen and Chan, 2016).<sup>4</sup> Most of this evidence comes from programs targeted at caregivers of young children (newborns to six years of age) in high-income countries, with an emphasis on interventions with young or first-time parents. Among parenting programs, home visit interventions have garnered considerable attention and been subjected to various evaluations. For example, the Home Visiting Evidence of Effectiveness (HomVEE) review, carried out by the U.S. Department of Health and Human Services, periodically examines the literature on home visiting programs serving pregnant women or families with children from birth to kindergarten entry.<sup>5</sup> Their systematic review of the evidence, which mainly includes studies in the U.S. and other high-income countries, has found several home visitation models to effectively reduce child maltreatment and improve parental practices (Sama-Miller et al., 2017).<sup>6</sup>

Evidence of the positive effects of parenting interventions—and home visiting programs, particularly—on child maltreatment in high-income countries is key in identifying the potential benefits of these programs. However, evidence from these contexts is insufficient when it comes to assessing their effectiveness in LMICs. Several obstacles, including sub-optimal recruitment and retention processes, communication with stakeholders, and program accessibility can hinder the effectiveness of parenting programs (Axford et al., 2012). Rigid

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<sup>4</sup> Parenting programs can be broadly understood as programs “oriented to improving how parents approach and execute their role as parents and to increasing parents’ child-rearing resources (including, knowledge, skills and social support)” (Daly et al., 2015, p. 12).

<sup>5</sup> Find more information in the HomVEE official webpage: <https://homvee.acf.hhs.gov/> (accessed August 9, 2021)

<sup>6</sup> HomVEE review findings regarding the effectiveness of home visitation in reducing violent parenting practices align with previous evidence. For example, Bilukha et al. (2005) review more than 20 impact evaluations of early childhood home visitation programs, finding strong evidence that these programs are effective in preventing child maltreatment.

budgetary constraints and institutional and political instability, often characteristic of LMICs and less common in high-income countries, add to these challenges. The effectiveness of parenting programs in reducing violent parenting practices may also be affected by social norms about the acceptability of violence, access to social services in the schools, and the level of violence in the community—factors that usually vary between contexts with different income levels. The cultural relevance of the intervention’s material might also vary across settings and affect the target population’s interest in it and, ultimately, its impact (Kumpfer et al., 2008; Mejía et al., 2015).

These differences raise questions about the applicability of results obtained in high-income countries to LMICs and call for evidence specific to these contexts, which is still sparse. Mikton and Butchart (2009) present a systematic review on evidence of the efficacy of child maltreatment prevention interventions. It includes 298 studies and concluded that impact evaluations of child maltreatment prevention interventions were exceedingly rare among LMICs, accounting for only 0.6 percent of the total evidence base (i.e., two studies). Knerr et al. (2013) reviewed the evidence of programs aimed at reducing harsh and abusive parenting and improving positive parenting practices, focusing exclusively on LMICs. While they find that, overall, interventions show favorable effects on some parenting measures, the authors highlight that the validity of the results in most studies is unclear. Only two trials had large sample sizes and low risk of bias (Cooper et al. (2009) in South Africa, and Rahman et al. (2009) in Pakistan), and neither focused on coercive parenting.

Since Knerr et al. (2013) published their review, others have studied the effectiveness of parenting interventions on child maltreatment in LMICs. However, the literature is still emergent (especially for countries in the Caribbean).<sup>7</sup> For example, McCoy et al. (2020) recently conducted a systematic review and meta-analysis on the effectiveness of parenting interventions in preventing violence against children in LMICs in East and Southeast Asia. Their work included a total of 11 studies looking at different parenting interventions,

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<sup>7</sup> The evidence on the impact of home visiting and parenting programs on early child development outcomes in LMICs is much more developed. Some studies have been carried in Jamaica, the setting of our intervention (Powell and Grantham-McGregor, 1989; Chang et al., 2015; Walker et al., 2018; Smith et al., 2021). These studies do not examine the impact on coercive or violent parenting practices.

from comprehensive programs aimed at improving parenting practices, family functioning, child behavior, and child psychosocial well-being, to ones with a specific focus and targeted at improving mother-child interaction and breastfeeding. As shown generally in the literature, most interventions targeted caregivers of young children, ranging from newborns to six years of age. Overall, the review finds small but significant reductions in abusive or negative parenting, and improvements in caregiver-child interactions.

The emerging state of the evidence on the effectiveness of parenting interventions (and home visiting programs) in reducing coercive parenting practices in LMICs reveals a critical gap in the literature, which is particularly important for programs that involve children over six years of age and adolescents. Marcus et al. (2019) reviewed the evidence on the impact of parenting programs on adolescents in LMICs: out of the 58 studies identified, only 18 examined changes in the attitudes to or the perpetration of violence. This study seeks to contribute to filling this gap by providing evidence of the effectiveness of a parenting intervention in reducing coercive parenting practices among caregivers of school-aged children in Jamaica, a highly violent middle-income Caribbean country. It uses an experimental design and combines data from both caregivers and children to provide rigorous and robust evidence to address this knowledge gap.

### **3. Jamaica's CSJP Parenting Intervention**

Jamaica is the most populated English-speaking Caribbean island, with approximately 2.73 million people.<sup>8</sup> According to the World Bank, Jamaica, similar to many of its surrounding island-nations, suffers from natural disasters and struggles with low growth, high public debt, and exposure to external shocks.<sup>9</sup> The country experiences high levels of violent crime, with 43,9 homicides per 100,000 inhabitants, well above the world (5,8) and Caribbean average (12,1) (UNODC, 2018).<sup>10</sup> Added to this is the high prevalence of violent disciplining practices, in particular among young children (ages 2–4). At 75

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<sup>8</sup> Source: [https://statinja.gov.jm/Demo\\_SocialStats/PopulationStats.aspx](https://statinja.gov.jm/Demo_SocialStats/PopulationStats.aspx) (accessed on August 9, 2021).

<sup>9</sup> Source: <https://www.worldbank.org/en/country/jamaica/overview> (accessed on August 9, 2021).

<sup>10</sup> Source: <https://dataunodc.un.org/content/data/homicide/homicide-rate> (accessed on August 9, 2021)

percent, Jamaica is second among Latin American and Caribbean (LAC) countries in terms of the rate of young children who have experienced exposure to physical punishment, which is found to persist among children aged 5 to 14 years, with a rate of 65 percent UNICEF (2017).<sup>11</sup>

In this context, the MNS implemented the CSJP, a national crime prevention initiative targeting at-risk youth in 50 violent and vulnerable communities across eight parishes in Jamaica. The CSJP was organized in three phases, the first beginning in 2001 and the last ending in December 2020. The successive phases incorporated an increasing number of communities, reaching 50 in the last phase, and an increasingly numerous and complex set of activities. Throughout its operation, the CSJP benefited an estimated 100,000 Jamaican citizens and was consistently the largest violence prevention program implemented by the Government of Jamaica.<sup>12</sup>

The set of communities that participated in the third phase of CSJP (CSJP III) included those communities that had participated in previous phases (legacy communities) and a new group of communities selected based on three criteria: (i) low-income status, (ii) high levels of crime and violence, and (iii) ability of community residents to participate in program activities.

One of the core components of the CSJP III was a parenting program aimed at reducing coercive practices. This initiative provided home visitations of a parenting trainer and workshops in which social workers shared positive child-rearing practices with parents, guardians, and other caregivers. A parenting trainer visited caregivers for six months and they were invited to three sessions of a group training workshop during that period as well. The parent trainers were selected among members of those same communities, with the requirement that they had resided a minimum of five years in the community and were considered leaders by the community members. They received 60 hours of instruction according to the curriculum developed by CSJP with the support of the National Parenting Support Commission (NPSC) and supervised by social workers.

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<sup>11</sup> UNICEF (2017) estimates that, worldwide, 63 percent of children aged 2 to 4 experience physical punishment.

<sup>12</sup> The third and final phase of the Program (CSJP III) was funded by the Inter-American Development Bank, through a loan operation and by the Governments of Canada and the UK, through grants.

This model of training community leaders who further train parents is based on the Triple P (Positive Parenting Programme) model (Sanders, 1992).<sup>13</sup> The material was structured around the National Extension Parent Education model's (NEPEM) six general categories for parent education (Smith et al., 1994): care for self, understanding children, nurturing children, giving guidance, motivating children and being an advocate. The intervention's content was complemented with insights from *The Incredible Years*, and Program H and M, and adapted for the Jamaican context to align it with GOJ parenting frameworks and highlight the reduction in coercive parenting practices.<sup>14</sup>

The parenting intervention was implemented in the parishes of St. Catherine, St. Ann, Kingston, St. Andrew, St. James, and Westmoreland between November 2017 and May 2018. The CSJP III team worked together with school authorities in these communities to target the intervention. School authorities were asked to identify families of children whom they believed could be at risk of coercive parenting practices. Based on the set of families identified by the schools, the CSJP III team selected a high-risk sample of 588 families who were contacted and invited to participate in the intervention. 372 families expressed their willingness to participate (63 percent of the total number of families identified by school authorities). These 372 households constitute the sample of our study. Due to limited availability of parenting trainers and oversubscription, CSJP offered the parenting intervention to 60 percent of the 372 families. 223 families were randomly assigned to the treatment group and the remaining 149 were assigned to the control group.

The intervention was effectively delivered to 123 of 223 families in the treatment group (55,2 percent). These families received at least one visit from a parenting trainer in their household. The families who undertook the intervention had an average of 20 visits from the parenting trainers during the six months of

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<sup>13</sup> Triple P is a parenting intervention model that has been implemented in more than 30 countries (<https://www.triplep.net/glo-en/home/>, accessed on October 8, 2021). The program has been widely evaluated, showing positive impacts in parenting practices, parent's wellbeing and children's behavior and wellbeing. For example, Prinz et al. (2009) show that the implementation of the program at the community level in a sample of 18 US counties led to significant reductions in child maltreatment country-level indicators. However, as with most of the literature, most evaluations have been conducted in high-income countries and focused on behavioral outcomes of young children.

<sup>14</sup> The Incredible Years is a development program (covering parent, teacher, and child interventions) with a strong evidential base (<https://incredibleyears.com/>, accessed on October 8, 2021). For example, one study on the Incredible Years Teacher Training Program in Jamaica (a school-based intervention) found that negative teacher behaviors decreased by over 50 percent and positive behaviors increased 4.5-fold in treated classrooms (Baker-Henningham et al., 2009).

the intervention. The maximum number of visits was 30 and most of these families (103 out of 123) received at least ten visits from the parenting trainers. The other families in the treatment group were offered the intervention but rejected it, on the grounds of time constraints and limitations around receiving the parenting trainer visits in their households.<sup>15</sup> Families in the control group were invited to participate in community workshops where social workers organized activities unrelated to parenting practices. These workshops helped social workers maintain contact with all the families in the study.

## 4. Data

### 4.1. Data Collection and Survey Instruments

#### *Data Collection Stages*

We conducted two data collection rounds, one before the intervention (baseline survey) and the other six months after the intervention (follow-up survey). Both data collection stages consisted of interviews with primary caregivers in the treatment and control families, and interviews with children between 5 and 15 years old. The interviews with caregivers were conducted at their homes. Children were interviewed in the school.<sup>16</sup>

Surveyors were social workers hired by an independent survey firm. They received training in the scales used in the survey instruments. Only the CSJP staff members knew each family's treatment status and sent the list of participants to the survey firm without this information. The CSJP's monitoring and evaluation team conducted follow-up calls for all the families in the study. Families' attendance at workshops and the number of parenting trainer's effective visits to households were recorded in an administrative database.

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<sup>15</sup> For our analysis, we do not exclude the households who rejected the intervention from the treatment group. As explained in Section 5, we perform an intention-to-treat (ITT) analysis, which captures the effect of *being assigned* to the treatment group. This analysis considers as treated both the households that undertook the intervention and those assigned to treatment group that did not undertake it.

<sup>16</sup> In each survey round and for each instrument, participants were asked to provide their informed consent to participate. First, surveyors gathered the main caregivers' own consent and requested their consent for their children's participation in the survey. Then the survey firm sent a copy of the consent form to schools and coordinated an appointment for conducting the children's survey. All the children's interviews were conducted under the supervision of their teachers or school principals.

### *Survey instruments*

The baseline survey collected data on families' socioeconomic characteristics and composition, primary caregivers' parenting practices and children's perceptions of these practices. In the follow-up survey, we surveyed caregivers and children about parenting practices.

The module on the socioeconomic characteristics of caregivers included questions on the primary caregiver's sex, age, marital status, and level of educational, age of oldest child, number of children in the household, and household income.<sup>17</sup> Primary caregivers in the sample were, on average, 43 years old, 91 percent of them female, 54 percent single, and the average number of children per household was 3.7. In terms of the highest educational attainment, 32 percent had completed primary school, and 51 percent had completed high school.<sup>18</sup>

We used the Parenting and Family Adjustment Scales (PAFAS) (Sanders et al., 2014) to measure parenting practices among caregivers.<sup>19</sup> This 30-item instrument assesses the quality of parenting practices on seven different subscales (Sanders et al., 2014): (i) parental consistency (level of engagement with children, main instructions to the child, and choices that do not vary over time); (ii) coercive practices (reported by the primary caregiver); (iii) positive encouragement (level of reinforcement of good behaviors of children); (iv) quality of the parent-child relationship; (v) parental adjustment (how the primary caregiver copes with its emotional demands as a parent); (vi) family relationships (level of supportive and conflict-free family environment); and (vii) parental teamwork (level of social support a parent receives from their partner in the parenting role). Each item in the PAFAS instrument states a parenting practice or attitude towards parenting and asks the caregiver to indicate how true the statement was for her over the past four weeks on a 4-point scale (Question: How true is this to you? Answers: never; rarely; often; all the time.). Answers are then added up for each subscale, with higher scores indicating higher

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<sup>17</sup> Some households (51) did not report their income level. For the econometric analysis, we impute the sample mean and construct an additional dummy variable (indicating if the value was imputed).

<sup>18</sup> Table 1 (below) presents the main descriptive of caregivers in the sample.

<sup>19</sup> The Parent and Family Adjustment Scales (PAFAS) is an inventory assessing parenting practices and parent and family adjustment. The questionnaire is available at The University of Queensland's website:

<https://pfsc.psychology.uq.edu.au/files/2624/Parenting%20and%20Family%20Adjustment%20Scales%281%29.pdf> (accessed on October 4, 2022).

dysfunction (some of the items are coded in reverse order accordingly).<sup>20</sup> To facilitate the comparison and interpretation of the results of the impact evaluation, we standardize the measure for each subscale (using the mean and standard deviation of the control group).<sup>21</sup>

The module on personal characteristics of children included questions on age, school grade, habits, and recent experiences. Children were 11 years old on average, and around 60 percent male. 16 percent of them indicated having consumed alcohol in the last six months. 34 percent reported bullying events at school in the previous six months.<sup>22</sup>

We used the Child Global Report of the Alabama Parenting Questionnaire (APQ, Shelton et al., 1996) to assess children's perceptions of caregiving practices.<sup>23</sup> The APQ measures five dimensions of parenting that are relevant to the etiology and treatment of child externalizing problems: (i) positive involvement with children, (ii) supervision and monitoring, (iii) use of positive discipline techniques, (iv) consistency in the use of such discipline, and (v) use of corporal punishment. The child rated each item on a 4-point scale. Answers are then added together for each subscale, with higher scores indicating higher dysfunction (some of the items are coded in reverse order accordingly).<sup>24</sup> As with the PAFAS information, we standardize the measure for each subscale (using the control group's mean and standard deviation) to facilitate the comparison and interpretation of results.

## 4.2. Retention Rate

For the caregivers' questionnaire, out of the 372 families who answered the baseline survey, 261 were successfully surveyed in the follow-up survey. Therefore, we have an attrition rate of almost 30 percent of the households in the follow-up survey. The attrition rate, however, was extremely similar between groups. We surveyed 156 out of 223 families in the treatment group (69,95

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<sup>20</sup> The questions on the parental teamwork subscale were only asked to caregivers who stated being in a relationship. For caregivers not in a relationship, we impute a zero for all items in this subscale.

<sup>21</sup> The standardized measure is:

$$\text{StandardizedMeasure} = \frac{\text{Measure} - \text{Mean (Measure | Control Group)}}{\text{SD (Measure | Control Group)}}$$

<sup>22</sup> Table 3 (below) presents the main descriptive of children in the sample.

<sup>23</sup> The Child Global Report of the Alabama Parenting Questionnaire (APQ) is a 42-question parent-report assessment tool. Available at:

<http://labs.uno.edu/developmental-psychopathology/APQ.html> (accessed on October 4, 2022).

<sup>24</sup> The original version of the instrument has a 5-point scale. We modified it to match the PAFAS answer scale and facilitate data collection.



percent) and 105 out of 149 households in the control group (70,46 percent), a difference of 0.51 percentage points between groups. According to HomVEE standards for attrition (Deke, Sama-Miller, and Hershey, 2015), this combination of overall and differential attrition is acceptable and considered not to be an obstacle for an RCT evaluation to be ranked as “high quality”.<sup>25</sup> Nevertheless, in the next section we formally test whether there is differential attrition between treatment and control families.

The attrition rate was higher among children. In each household, surveyors interviewed the children between 5 and 15 years old in the control and treatment household found at school during the days of the survey. In some cases, the set of children surveyed in each household changed from baseline to follow-up. At baseline, we surveyed 603 children. At follow-up, we obtained 372 responses, 82 of which were from children who had not responded in the baseline survey. Among children, therefore, the attrition rate was 51.9 percent (54 percent among the treated and 51 percent among the control). Given the high attrition rate among them, for the evaluation of the intervention’s impact we focus on the 372 children who responded to the follow-up survey.<sup>26</sup> The interpretation of the results obtained from this analysis should take into account the potential selection in the sample.

## 5. Empirical Strategy

This section describes the econometric models used to estimate the intervention’s impact and presents the validity checks of their underlying assumptions.

### 5.1. Econometric Models

We rely on the random allocation of families to the treatment and control groups to identify the intervention’s intention-to-treat (ITT) effect on parenting practices as measured by the instruments described in the previous section. The ITT analysis captures the effect of *being assigned* to the treatment group and,

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<sup>25</sup> HomVEE consider high rates of overall attrition acceptable when the differential attrition rate is low. For reference, based on HomVEE standards, with an overall attrition of 30 percent, the maximum differential attrition that would not be an obstacle for a study to be ranked “high quality” is 4.1 percentage points, almost ten times more than in our case.

<sup>26</sup> According to HomVEE standards for attrition (Deke, Sama-Miller, and Hershey, 2015, Table 1), this combination of overall and differential attrition is not acceptable.

therefore, considers all households assigned to the treatment group as "treated" regardless of whether they actually undertook the intervention or not. The main identification assumption is that, had there been no intervention, average parenting practices would not have been statistically different between caregivers assigned to the treatment and control groups.

#### *Caregivers (PAFAS)*

We first assess the intervention's impact on parenting practices using the information provided by caregivers and captured by the different PAFAS subscales. We estimate the impact as the difference in the follow-up means of each subscale between treatment and control caregivers. Formally, we estimate the following linear regression model by ordinary least squares (OLS):

$$PAFAS_i = \alpha + \beta Treated_i + \varepsilon_i \quad (1)$$

where  $PAFAS_i$  refers to the (standardized) value of a PAFAS subscale for household  $i$ ;  $Treated_i$  is a dummy indicator that equals one if the household was assigned to the treatment group, and zero otherwise; and  $\varepsilon_i$  is an idiosyncratic error term. The coefficient of interest is  $\beta$ , which captures the difference in means obtained in the follow-up survey between caregivers in the treatment and the control groups. The interpretation of  $\beta$  as the intervention's impact, relies on the assumption that, given the random nature of the assignment, any observed differences in the follow-up level in parenting practices is attributable to the intervention.

We complement the benchmark model (1) (which we name the levels model) by including a set of covariates measured at baseline: sex and age of the caregiver, age of first child, number of children, marital status, highest school level achieved, income level (and a dummy variable indicating whether the value was imputed), the pre-intervention value of the PAFAS parental teamwork scale and the pre-intervention value of the outcome. The inclusion of baseline covariates serves a double purpose: First, correcting potential baseline imbalances in the characteristics of the treatment and control group that might arise by chance and affect the interpretation of the results. Second, improving the precision of the estimates.

We further assess the robustness of the results obtained from the benchmark model by estimating a difference-in-differences model. Formally, we estimate the following equation:

$$\Delta PAFAS_i = \alpha + \beta \text{treated}_i + \varepsilon_i \quad (2)$$

where the outcome variable ( $\Delta PAFAS_i$ ) is the difference between the follow-up and the baseline level for each PAFAS subscale for caregiver  $i$ . The coefficient of interest is  $\beta$ , which captures the difference in the differences (hence the model's name) between follow-up and baseline across the treatment and the control. The interpretation of  $\beta$  as the intervention's impact, relies on the assumption that, given the random nature of the assignment, any observed differences between the groups in the change in parenting practices is attributable to the intervention. As with the benchmark model, we also estimate the model by including a set of baseline covariates to correct for potential baseline imbalances and improve the estimates' precision.

#### *Children (APQ)*

We also estimate the intervention's impact on parenting practices using the information provided by the children and captured by the different APQ scales. In this case, we use only the information obtained in the follow-up survey. We estimate the model in levels, comparing differences in parenting practices perceptions reported in the follow-up survey between children in the treatment and the control groups. Formally, we estimate the following linear regression model by Ordinary Least Squares (OLS):

$$APQ_i = \alpha + \beta \text{Treated}_i + \varepsilon_i \quad (3)$$

where the outcome variable ( $APQ_i$ ) is the (standardized) value of a APQ subscale for child  $i$ ; and the model's interpretation is analogous to that of model (1). We cluster standard errors at the household level. We also estimate the model including the same set of household-level covariates used for the regression with caregivers' data. As indicated in the previous section, some of the children (82) who completed the follow-up survey had not completed the baseline survey. Therefore, for children's responses, we do not estimate the difference-in-difference model to avoid eliminating those children from the sample and performing an analysis with an overly small sample.

## 5.2. Validity Checks

### *Balance in covariates*

To support the validity of our identification assumption, we compare caregivers in the treatment and control groups in terms of sociodemographic characteristics (sex, age, age of oldest child, number of children), marital status, educational attainment, and (household) income, as reported in the baseline survey. Table 1 reports the mean and standard deviation for these variables for all caregivers (Column 1), caregivers in the treatment group (Column 2), caregivers in the control group (Column 3), and the p-value of the difference between the two means (Columns 4). We do not observe any significant difference (at standard significance levels) in these characteristics between caregivers in the treatment and the control groups.

**Table 1: Summary Statistics and Balance Tests: Pre-Intervention Socioeconomic Variables**

		All households			Control households			Treated households			Treated versus control	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Demo-graphic	Female (%)	372	0.91	0.28	149	0.92	0.27	223	0.91	0.29	-0.01	0.65
	Age (years)	369	42.91	9.75	147	43.1	9.73	222	42.78	9.78	-0.33	0.75
	Age first child (yrs.)	369	19.17	3.87	148	19.18	3.78	221	19.17	3.93	0	0.99
	# of children	368	3.65	1.82	148	3.59	1.8	220	3.69	1.84	0.1	0.61
Marital status (%)	Married and cohabiting	372	0.12	0.33	149	0.1	0.3	223	0.13	0.34	0.03	0.32
	Common-law relationship	372	0.23	0.42	149	0.23	0.42	223	0.24	0.43	0.01	0.83
	Single	372	0.54	0.5	149	0.56	0.5	223	0.52	0.5	-0.04	0.41
	Visiting relationship	372	0.06	0.24	149	0.05	0.21	223	0.07	0.25	0.02	0.4
	Separated	372	0.04	0.19	149	0.05	0.21	223	0.03	0.17	-0.02	0.46
	Widowed	372	0.01	0.1	149	0.01	0.12	223	0.01	0.09	0	0.7
Highest level of schooling completed (%)	None	372	0.01	0.12	149	0.01	0.08	223	0.02	0.13	0.01	0.31
	Primary	372	0.32	0.47	149	0.31	0.46	223	0.32	0.47	0.01	0.77
	High school	372	0.51	0.5	149	0.52	0.5	223	0.5	0.5	-0.01	0.78
	College / vocational	372	0.15	0.36	149	0.15	0.36	223	0.15	0.36	-0.01	0.87
	University	372	0.01	0.1	149	0.01	0.12	223	0.01	0.09	0	0.7
Household income	Monthly income (JMD)	321	21557	15989	133	21710	15601	188	21449	16298	-261	0.88

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey.

Notes: Variable "female" refers to the household's primary caregiver, who completed the survey. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

We also compare caregivers in the treatment and control groups in terms of their baseline parenting practices (as measured by the different PAFAS subscales). Table 2 reports the mean and standard deviation for the seven subscales for all caregivers (Column 1), caregivers in the treatment group (Column 2), caregivers in the control group (Column 3), and the p-value of the difference between the two means (Columns 4). We observe no significant differences in parenting practices between the treatment and control groups, which validates our experiment design and empirical strategy.

**Table 2: Summary Statistics and Balance Tests: Pre-Intervention Parenting Practices (PAFAS Subscales)**

	All households			Control households			Treated households			Treated vs. control	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Parental consistency	372	10.86	1.95	149	10.66	1.89	223	10.99	1.98	0.32	0.12
Coercive parenting	372	12.73	2.88	149	12.64	2.81	223	12.79	2.93	0.14	0.63
Positive encouragement	372	5.9	1.83	149	6.05	1.84	223	5.79	1.82	-0.26	0.18
Parent-child relationship	372	8.28	2.02	149	8.48	1.98	223	8.15	2.04	-0.32	0.13
Parental adjustment	372	10.76	2.53	149	10.75	2.57	223	10.77	2.5	0.02	0.96
Family relationships	372	7.8	2.35	149	7.62	2.26	223	7.91	2.4	0.3	0.23
Parental teamwork	372	2.46	3.12	149	2.3	3.12	223	2.57	3.12	0.27	0.42

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey, completed by the household's primary caregiver.

Notes: Each row corresponds to a subscale of the PAFAS (Sanders et al., 2014) survey instrument, used to measure parenting practices among caregivers. Higher scores indicate more dysfunctional practices. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

Finally, we compare the pre-intervention individual characteristics and perception of parenting practices of children in the treatment and control groups. Table 3 shows the mean and standard deviation for these variables for all children (Column 1), children in the treatment group (Column 2), children in the control group (Column 3), and the p-value of the difference between the two means (Columns 4). We observe no significant pre-intervention differences (at standard significance levels) between children in the treatment and control groups in their main demographic characteristics and reported risk factors (alcohol consumption and bullying). We find two significant differences (at the 10-percent significance level) among the five APQ subscales: parental involvement and positive parenting, showing worse practices in the treatment group.

**Table 3: Summary Statistics and Balance Tests: Child Characteristics and Pre-Intervention Parenting Practices (APQ Subscales)**

		All households			Control households			Treated households			Treated vs. control	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Demo-graphic	Female	604	0.42	0.49	240	0.42	0.49	364	0.41	0.49	0	0.96
	Age	604	10.82	2.73	240	10.95	2.69	364	10.74	2.76	-0.22	0.34
	School Grade	604	5.55	2.55	240	5.61	2.56	364	5.51	2.55	-0.1	0.65
Risk factors	Alcohol consumption	604	0.16	0.37	240	0.15	0.36	364	0.17	0.37	0.01	0.66
	Bullying at school	604	0.34	0.48	240	0.33	0.47	364	0.35	0.48	0.02	0.68
Alabama Parenting Questionnaire (APQ)	Involvement	549	22.81	6.14	222	22.19	6.23	327	23.2	6.05	1.04	0.05
	Positive parenting	603	11.96	4.05	239	11.59	3.98	364	12.2	4.09	0.61	0.06
	Supervision and monitoring	603	17.42	4.93	239	17.23	4.8	364	17.55	5.02	0.33	0.44
	Inconsistent discipline	603	11.96	3.36	239	12.05	3.44	364	11.89	3.3	-0.16	0.57
	Corporal Punishment	551	7.15	2.42	222	7.11	2.44	329	7.18	2.4	0.07	0.74

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey, completed by children between 6 and 15 years old.

Notes: The variable "alcohol consumption" takes value 1 if child reported alcohol consumption in the last six months. The variable "bullying at school" takes value 1 if the child reported bullying events at school in the previous six months. Each row in the APQ section corresponds to a subscale of the Child Global Report of the APQ (Shelton et al., 1996) survey instrument used to assess children's perceptions of caregiving practices. Higher scores indicate more dysfunctional practices. The first two columns (all households) include information on households in the treatment and control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

### *Follow-up survey attrition*

As indicated in section 4.2, 30 percent of the primary caregivers interviewed at baseline did not respond to the follow-up survey and, therefore, are not included in the estimation of the intervention's impact. Even if the overall and differential attrition are within acceptable levels (Deke, Sama-Miller, and Hershey, 2015), they remain a potential source of bias.<sup>27</sup> We conduct a series of validity and robustness checks to address this issue.

<sup>27</sup> Even if the attrition rate is extremely similar in the treatment and control groups, if the characteristics of those who completed the follow-up survey (i.e., the non-attriters) differ significantly between the groups, the estimate of the impact of the intervention could be biased. For example, if most non-attriters in the control group were male and most non-attriters in the treatment group were female, we might have similar attrition rates, but our estimates of the impact of the intervention would likely be confounded with the differences between sexes. The two exercises presented below verify that non-attriters are similar between the treatment and control groups.

First, we verify if households in the treatment and control groups who completed the follow-up survey (i.e., the non-attriters) were similar at baseline. To do so, we replicate Tables 1 to 3 but limit our sample to households who completed the follow-up survey (see Tables A.1 to A.3 in the Appendix). We find no significant pre-intervention differences in sociodemographic characteristics among non-attriters in the treatment and control groups, which validates our empirical strategy. We find only one significant difference among the seven PAFAS subscales (parental teamwork, worse in treatment group) and one among the five APQ subscales (positive parenting, worse in treatment group). In the covariate-adjusted models presented in Section 6, we include the pre-intervention (baseline) value of the parental teamwork PAFAS subscale as a covariate to account for its imbalance at baseline.

Second, we model the decision to complete the follow-up survey to verify whether households in the treatment and control groups behaved differently in this respect. Table A.4 presents the results of the estimation of three alternative models. The first model regresses an indicator variable of follow-up survey completion on the treatment indicator variable. The model results (Table A.4, Column 1) show that attrition rates are not significantly different between groups. In other words, treatment status (i.e., being assigned to treatment or control) did not affect the likelihood that a household would complete the follow-up survey. The second model (Table A.4, Column 2) includes household characteristics as additional covariates. We find that, even conditional on these characteristics, treatment status did not alter the likelihood of completing the follow-up survey. Finally, we regress the indicator variable of survey completion on (a) household characteristics, (b) a treatment dummy, and (c) the interaction between household characteristics and treatment status. The interaction terms serve to understand whether the relationship between observable household characteristics and the likelihood of completing the survey was different between treatment and control groups.<sup>28</sup> The F-statistic of the interaction terms (c) shows that these terms are not (jointly) significantly different from zero, providing further evidence of no differential attrition.

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<sup>28</sup> The interaction terms would help in understanding whether, for example, the primary caregiver's sex affected the likelihood of completing the survey differently in treated and control households.



In addition to these validity checks, we further assess whether our results are affected by differential attrition by re-estimating the regressions for all outcomes using inverse probability of follow-up response as sample weights. We first use household baseline characteristics to estimate the probability of response, and then use the inverse of these probabilities as sample weights. This re-weighting attaches more importance to households who are similar (in terms of observable characteristics) to attriters, seeking to reduce the potential bias introduced by attrition.<sup>29</sup> We present these results in the next section together with our benchmark estimates.

## 6. Results: Intervention's Impact on Parenting Practices

This section presents the results of the evaluation of the CSJP III parenting intervention's impact on parenting practices, as captured by the different subscales of the PAFAS and APQ survey instruments.

### *Caregivers (PAFAS)*

Table 4 summarizes the results of the estimations using the information provided by caregivers.<sup>30</sup> The first three columns present the results from the model in levels (Equation 1). Column 1 shows the results for the benchmark model (no covariates), Column 2 presents the results for the model with covariates, and Column 3 presents the results of the no covariates model using inverse probability of response as sample weights. Columns 4 to 6 show the results of the difference-in-differences model (Equation 2) with no covariates, covariates, and inverse probability sample weights, respectively. Each row presents the estimate of the intervention's impact ( $\hat{\beta}$ ) on a different outcome variable.

We find that the parenting intervention led to a significant reduction in coercive parenting practices, as measured by the PAFAS' "Coercive Parenting" subscale. This result is robust to the alternative model specifications. The point estimate of the reduction ranges from 0.28 to 0.45 standard deviations across

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<sup>29</sup> For this, we used the set of characteristics for each household and used a logistic model to predict the probability of the household not responding to the follow-up survey. We then include in our regressions the inverse of the predicted probability as a weight using the *aweight* command in STATA.

<sup>30</sup> Table A.5 in the appendix presents the follow-up (post-intervention) mean and standard deviation for the different PAFAS subscales for all caregivers (Column 1), caregivers in the control group (Column 2), and caregivers in the treatment group (Column 3). It also reports the p-value of the difference between the two means (Columns 4). The information allows to compute standard Cohen's d and Glass' delta statistics.

the different models, representing a medium effect size, in the range of those observed for parenting programs in other LMICs (McCoy et al., 2020). This result speaks to the effectiveness of the program in achieving its primary goal: nurture in caregivers engenders the capacity to engage in effective parenting strategies without coercion.

We also find that the intervention led to a (less-robust) improvement in “positive encouragement” practices (around 0.2 standard deviations). We do not find evidence of a significant impact of the intervention in the other PAFAS subscales: point estimates are generally small in absolute value and not statistically different from zero (at standard significance levels).

**Table 4: Intervention’s Impact on Parenting Practices (*PAFAS subscales*)**

		Levels model			Difference-in-differences model		
		(1)	(2)	(3)	(4)	(5)	(6)
Parental consistency	$\hat{\beta}$	0.0524	-0.0181	-0.0165	-0.0828	-0.0164	-0.129
	SE	(0.125)	(0.124)	(0.134)	(0.133)	(0.113)	(0.147)
Coercive parenting	$\hat{\beta}$	-0.324**	-0.363***	-0.449***	-0.275**	-0.299***	-0.347**
	SE	(0.128)	(0.125)	(0.143)	(0.132)	(0.103)	(0.150)
Positive encouragement	$\hat{\beta}$	-0.215*	-0.186*	-0.189	-0.0823	-0.168*	-0.00522
	SE	(0.114)	(0.111)	(0.122)	(0.124)	(0.100)	(0.131)
Parent-child relationship	$\hat{\beta}$	0.127	0.0982	0.112	0.136	0.0940	0.180
	SE	(0.117)	(0.113)	(0.130)	(0.127)	(0.108)	(0.142)
Parental adjustment	$\hat{\beta}$	0.0309	-0.0252	0.0274	-0.00160	-0.0231	0.0398
	SE	(0.123)	(0.116)	(0.131)	(0.125)	(0.106)	(0.132)
Family relationships	$\hat{\beta}$	0.169	0.0884	0.155	0.0255	0.0774	0.0663
	SE	(0.122)	(0.126)	(0.131)	(0.125)	(0.110)	(0.139)
Parental teamwork	$\hat{\beta}$	-0.0178	-0.0856	0.0466	-0.218*	-0.0734	-0.138
	SE	(0.126)	(0.111)	(0.136)	(0.128)	(0.0950)	(0.146)
# observations		261	256	243	261	256	243
Covariates		No	Yes	No	No	Yes	No
IPW weighting		No	No	Yes	No	No	Yes

Notes: Each row presents the estimation of the intervention’s impact on a subscale of the PAFAS (Sanders et al., 2014) survey instrument. Negative values indicate an improvement in parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

We focus on the impact on the PAFAS “coercive parenting” subscale and examine how the intervention affected its different items. This subscale consists of five items: (i) I shout or get angry with my child when they misbehave; (ii) I try to make my child feel bad (e.g., guilt or shame) for misbehaving; (iii) I spank

(beat) my child when they misbehave; (iv) I argue with my child about their behavior / attitude; (v) I get annoyed with my child. For each statement, the caregiver had to indicate how true the statement was for her over the past four weeks on a 4-point scale following. Table 5 presents the results of the estimation of the intervention's impact on each of them. We find that the improvement in the PAFAS' "coercive parenting" subscale was driven by medium to large changes in caregiver's likelihood to shout (first item) and beat (third item) their children for misbehaving, arguably the two of the harshest practices captured by the survey instrument. These results are consistent and robust across the alternative model specifications.

**Table 5: Intervention's Impact on Coercive Parenting Items (PAFAS)**

		Levels model			Difference-in-differences model		
		(1)	(2)	(3)	(4)	(5)	(6)
I shout or get angry with my child when they misbehave	$\hat{\beta}$ SE	-0.596*** (0.130)	-0.657*** (0.132)	-0.648*** (0.134)	-0.456*** (0.127)	-0.507*** (0.102)	-0.435*** (0.131)
I try to make my child feel bad (e.g., guilt or shame) for misbehaving	$\hat{\beta}$ SE	-0.191 (0.127)	-0.179 (0.129)	-0.251* (0.139)	-0.102 (0.134)	-0.155 (0.112)	-0.149 (0.147)
I spank (beat) my child when they misbehave	$\hat{\beta}$ SE	-0.311** (0.122)	-0.307** (0.122)	-0.378*** (0.132)	-0.237** (0.118)	-0.226** (0.0899)	-0.262** (0.126)
I argue with my child about their behavior / attitude	$\hat{\beta}$ SE	-0.0186 (0.129)	-0.0333 (0.125)	-0.115 (0.139)	-0.0406 (0.130)	-0.0259 (0.0973)	-0.142 (0.144)
I get annoyed with my child	$\hat{\beta}$ SE	0.131 (0.124)	0.0712 (0.121)	0.0322 (0.134)	0.0467 (0.131)	0.0583 (0.0995)	-0.0110 (0.142)
# Observations		261	256	243	261	256	243
Covariates		No	Yes	No	No	Yes	No
IPW Weighting		No	No	Yes	No	No	Yes

Notes: Each row presents the estimation of the intervention's impact on an item of the PAFAS (Sanders et al., 2014) survey instrument. Negative values indicate an improvement in parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\* p < 0.01; \*\*p < 0.05; \* p < 0.1

To better grasp the magnitude of these impacts, we define a binary (dummy) variable that takes value 1 if a caregiver's response is that they adopt the coercive practice when their children misbehave "often" or "All the time". We then re-estimate our linear regression models using these outcomes as dependent variables. Table A.6 in the appendix presents the results of these estimations. We find that the intervention led to a 25 to 30 percentage points (p.p.) decrease in

frequent yelling and a 10 to 15 p.p. fall in frequent beating. Using the estimates from our baseline model (Column 1, levels without covariates), these impacts represent a 35 percent and 32 percent fall in the likelihood of observing these behaviors relative to the control group.

#### *Children (APQ)*

Table 6 summarizes the results of the estimations using the information provided by children. As discussed above, we focus on children who completed the follow-up survey (even if they had not completed the baseline survey). Column 1 shows the results for the benchmark model (no covariates) and Column 2 presents the results for the model with household-level covariates. Each row presents the estimate of the intervention's impact ( $\hat{\beta}$ ) on a different outcome variable.<sup>31</sup>

**Table 6: Intervention's Impact on Parenting Practices (APQ Subscales)**

		Levels Model		
		(1)	(2)	N
Involvement	$\hat{\beta}$	-0.0509	-0.0719	342
	SD	(0.122)	(0.125)	
Positive parenting	$\hat{\beta}$	-0.0337	-0.0488	372
	SD	(0.113)	(0.118)	
Supervision and monitoring	$\hat{\beta}$	0.117	0.137	372
	SD	(0.111)	(0.111)	
Consistent discipline	$\hat{\beta}$	0.0739	0.0925	372
	SD	(0.106)	(0.110)	
Use of corporal punishment	$\hat{\beta}$	-0.134	-0.130	342
	SD	(0.114)	(0.120)	
Covariates		No	Yes	

Notes: Each row presents the estimation of the intervention's impact on a subscale of the Child Global Report of the APQ (Shelton et al., 1996) survey instrument. Negative values indicate an improvement in children's perception of parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\* p < 0.01; \*\*p < 0.05; \* p < 0.1

<sup>31</sup> Table A.7 in the Appendix presents the follow-up (post-intervention) mean and standard deviation for the different APQ subscales for all children (Column 1), children in the control group (Column 2), and children in the treatment group (Column 3). It also reports the p-value of the difference between the two means (Columns 4). The information allows to compute standard Cohen's d and Glass' delta statistics.

We do not find evidence of a significant impact of the intervention in any of the APQ subscales. We observe a negative -but not statistically significant- coefficient in the “use of corporal punishment” scale.<sup>32</sup> We further explore this result by examining the differences between treatment and control group children in four individual APQ items associated with coercive parenting practices: (i) My mom beats me with her hand when I have done something wrong; (ii) My mom beats me when I have done something wrong; (iii) My mom hits me with a belt, switch, or other object when I have done something wrong; (iv) My mom shouts at me when I have done something wrong. The first three statements make up the APQ “Use of Corporal Punishment” scale, and the fourth statement is a standalone item. Table 7 shows the results of these estimations. We find modest but statistically significant (at the 10-percent level) differences between the treatment and control groups in two out of the four items. In line with the reduction in coercive parenting practices observed in the answers provided by caregivers, we find that children in the control group reported less yelling and hitting with belts or objects (arguably the most severe coercive practice measured by the APQ) by their mothers than those in the control group.<sup>33</sup> Nevertheless, while it is reassuring to observe results that align with the positive impact measured among caregivers, the large and differential attrition rates observed among children should prevent us from deriving further conclusions from these data.

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<sup>32</sup> The absence of significant effects in children’s perception of the use of violent practices is frequent in the literature. Marcus et al. (2019) review the evidence on the impact of parenting interventions on use of violent parenting practices among caregivers of adolescent children. While caregivers reported reduced use of physical and verbal violence in most studies reviewed, adolescents generally perceived less change (and perceived no change in around half of the studies).

<sup>33</sup> We focus on mothers, who represent more than 90 percent of the primary caregivers (as reported in the household survey) and for whom we have more follow-up information (342 observations). We do not observe significant effects for fathers (with only 155 observations in the follow-up).

**Table 7: Intervention's Impact on Selected Parenting Practices (APQ)**

Levels Model				
		(1)	(2)	N
My mom beats me with her hand when I have done something wrong.	$\hat{\beta}$	0.119	0.121	342
	SD	(0.107)	(0.114)	
My mom beats me when I have done something wrong.	$\hat{\beta}$	-0.196	-0.171	342
	SD	(0.120)	(0.124)	
My mom hits me with a belt, switch, or other object when I have done something wrong	$\hat{\beta}$	-0.210*	-0.230**	342
	SD	(0.107)	(0.111)	
My mom shouts at me when I have done something wrong.	$\hat{\beta}$	-0.215*	-0.225*	342
	SD	(0.126)	(0.131)	
Covariates		No	Yes	

Notes: Each row presents the estimation of the intervention's impact on an item of the Child Global Report of the APQ (Shelton et al., 1996) survey instrument. Negative values indicate an improvement in children's perception of parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

The main results herein use caregivers' self-reported data on violent parenting practices. The use of self-reported data has the limitation that information may be affected by misreporting. For example, if caregivers feel that certain practices are not socially desirable, they may decide not to report them. Therefore, if the intervention changed caregivers' perceptions on what is acceptable parenting behavior, the observed effects may confound changes in the willingness to report violent practices, leading to changes in the actual frequency of violent events. In an effort to mitigate this potential issue, we use validated survey instruments and combine responses from caregivers and children. The fact that the results from children's responses align with those obtained from caregivers' responses lends support to the observed effects being due to actual changes in behavior.<sup>34</sup>

#### *Heterogeneous Effects among Caregivers (PAFAS)*

We assess heterogeneous effects of the intervention by focusing on those families that reported the most dysfunctional parenting practices prior to the intervention. These families have the greatest potential for improvement but may also have deep-rooted beliefs and practices, which could be difficult to change. Assessing the results among these subpopulations is critical to understanding

<sup>34</sup> Furthermore, changing caregivers' beliefs on the seriousness or social desirability of coercive parenting practices is arguably an important step for behavioral changes.

the full potential of the intervention and informing the targeting of similar initiatives. For each of the PAFAS subscales, we re-estimate the intervention's impact, limiting the sample to households with the highest baseline levels (the top 25 percentile). In other words, we compare the post-intervention practices across households in the treatment and control groups who scored worst at baseline. Table 8 summarizes the results of the estimations of the different models in this subpopulation. As in Table 4, the first three columns refer to the model in levels (no covariates, covariates, and inverse probability sample weights, respectively) and the following three columns show the results for the difference-in-differences model.

We find that the parenting intervention led to relatively large and significant reduction in the PAFAS' "Coercive Parenting" subscale among those with worse pre-intervention practices. The result is consistent across the different models, ranging from 0.41 to 0.82 standard deviations. Point estimates are larger than for the full sample, an indication that the intervention might have been more effective among caregivers with more coercive parenting practices at baseline.<sup>35</sup> We also find a larger and more robust impact on the PAFAS' "Positive Encouragement" subscale among those who reported fewer of these practices before the intervention. Points estimates range from 0.2 to 0.48 standard deviations. As in the full sample, we do not find evidence of a significant impact of the intervention in the other PAFAS subscales: point estimates are generally small in absolute value and not statistically different from zero (at standard significance levels).

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<sup>35</sup> Table A.8 in the Appendix reports the impact of intervention on the rest of the population (i.e., the bottom 75 percentile). We observe that estimated coefficients for the Coercive Parenting index are also negative (pointing to a reduction in coercive parenting practices) but smaller in absolute value and less precise.

**Table 8: Intervention's Impact on Parenting Practices (PAFAS Subscales, Top 25 percentile)**

		Levels model			Difference-in-differences model		
		(1)	(2)	(3)	(4)	(5)	(6)
Parental consistency	$\hat{\beta}$	-0.0650	-0.152	-0.150	-0.116	-0.138	-0.219
	SE	(0.212)	(0.236)	(0.215)	(0.228)	(0.214)	(0.237)
	N	96	95	88	96	95	88
Coercive parenting	$\hat{\beta}$	-0.625**	-0.502*	-0.851***	-0.379*	-0.414*	-0.499*
	SE	(0.244)	(0.273)	(0.286)	(0.213)	(0.225)	(0.264)
	N	78	76	72	78	76	72
Positive encouragement	$\hat{\beta}$	-0.476**	-0.383*	-0.339*	-0.309*	-0.348*	-0.182
	SE	(0.187)	(0.194)	(0.189)	(0.178)	(0.176)	(0.187)
	N	99	97	88	99	97	88
Parent-child relationship	$\hat{\beta}$	-0.0181	-0.0684	0.0418	-0.0941	-0.0655	-0.0508
	SE	(0.252)	(0.304)	(0.260)	(0.234)	(0.291)	(0.251)
	N	68	67	61	68	67	61
Parental adjustment	$\hat{\beta}$	0.0760	0.0440	0.0913	0.175	0.0403	0.185
	SE	(0.209)	(0.245)	(0.226)	(0.206)	(0.225)	(0.234)
	N	73	72	68	73	72	68
Family relationships	$\hat{\beta}$	0.0736	0.123	0.117	-0.0258	0.108	0.0332
	SE	(0.262)	(0.298)	(0.292)	(0.242)	(0.261)	(0.276)
	N	81	80	73	81	80	73
Parental teamwork	$\hat{\beta}$	-0.0229	0.129	0.132	-0.0253	0.110	0.146
	SE	(0.277)	(0.309)	(0.290)	(0.275)	(0.265)	(0.286)
	N	72	70	68	72	70	68
Covariates		No	Yes	No	No	Yes	No
IPW weighting		No	No	Yes	No	No	Yes

Notes: Each row presents the estimation of the intervention's impact on a subscale of the PAFAS (Sanders et al., 2014) survey instrument among the subpopulation with highest (top 25 percentile) scores at baseline (i.e., worse practices). Negative values indicate an improvement in parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ .

## 7. Final Remarks

Three out of four children worldwide experience violent discipline by their caregivers regularly. One out of four caregivers believes in the necessity of physical punishment as a form of discipline (UNICEF, 2017). These high levels of exposure to violence among children and acceptance of violent practices are problematic for several reasons: they carry high health, social, and economic costs and increase the risk of perpetuating violent behaviors into future generations. Family and youth violence are therefore central public health



concerns. Jamaica is not exempt from these problems: exposure to physical punishment affects about 75 percent of children between 2 and 4 years old and persists at high rates in later stages (UNICEF, 2017).

Several home visiting parenting programs have proven effective in reducing coercive practices and improving children's well-being in high-income countries. However, evidence for low- and middle-income countries is scarce and much needed for more thoughtful and better-informed policies to address these issues in these countries.

This study provides evidence of the effectiveness of a parenting intervention in mitigating coercive parenting practices in Jamaica. The intervention took place in the context of the broader Citizen Security and Justice Program III (CSJP III), implemented by the Ministry of National Security of Jamaica, which targeted at-risk youth in 50 vulnerable communities across eight parishes in Jamaica. The intervention consisted of home visits by a parental trainer every two weeks for six months and participation in three group training workshop sessions.

We find evidence that the intervention significantly reduced (0.28 to 0.45 standard deviations) coercive parenting practices. We also find suggestive evidence that the intervention increased positive encouragement practices (around 0.2 standard deviations). These impacts appear to be larger among households with the worst (top 25 percentile) pre-intervention levels for each outcome, underscoring the intervention's potential and providing insights for the targeting of similar initiatives. We do not find evidence of a significant impact of the intervention on other parenting practices, such as parental consistency, parental adjustment, or parental teamwork.

The study adds to the growing literature on the effectiveness of home visiting and other parenting interventions in LMICs, seeking to narrow the -still broad- evidence gap between these and high-income countries and provide policymakers with information to design and implement parenting programs. Using an experimental design and combining data from both caregivers and children, the study provides rigorous and robust evidence of the effectiveness of a parenting intervention in reducing coercive parenting practices among caregivers of school-aged children in Jamaica, a relatively understudied context and population.

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## APPENDIX

**Table A.1: Summary Statistics and Balance Tests (Non-Attrititors): Pre-Intervention Socioeconomic Variables**

		All households			Control households			Treated households			Treated vs. control	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Demo-graphic	Female (%)	261	0.94	0.24	105	0.96	0.19	156	0.92	0.27	-0.04	0.17
	Age (years)	258	42.75	9.83	103	43.13	10.11	155	42.49	9.67	-0.64	0.61
	Age first child (yrs.)	259	19.08	3.72	105	19.27	3.62	154	18.95	3.8	-0.31	0.51
	# of children	259	3.77	1.85	105	3.62	1.76	154	3.87	1.92	0.25	0.28
Marital status (%)	Married and cohabiting	261	0.13	0.34	105	0.1	0.31	156	0.15	0.36	0.04	0.3
	Common-law relationship	261	0.21	0.41	105	0.2	0.4	156	0.22	0.41	0.02	0.73
	Single	261	0.56	0.5	105	0.61	0.49	156	0.52	0.5	-0.09	0.15
	Visiting relationship	261	0.05	0.23	105	0.03	0.17	156	0.07	0.26	0.04	0.11
	Separated	261	0.03	0.18	105	0.04	0.19	156	0.03	0.18	-0.01	0.8
	Widowed	261	0.02	0.12	105	0.02	0.14	156	0.01	0.11	-0.01	0.7
Highest level of schooling completed (%)	None	261	0.02	0.14	105	0.01	0.1	156	0.03	0.16	0.02	0.31
	Primary	261	0.28	0.45	105	0.27	0.44	156	0.29	0.46	0.03	0.62
	High school	261	0.53	0.5	105	0.54	0.5	156	0.52	0.5	-0.02	0.71
	College / vocational	261	0.15	0.36	105	0.16	0.37	156	0.15	0.36	-0.01	0.75
	University	261	0.02	0.12	105	0.02	0.14	156	0.01	0.11	-0.01	0.7
Household income	Monthly income (JMD)	221	21266	16776	90	21194	17256	131	21316	16505	122	0.96

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey.

Notes: The table includes information only on households that completed the follow-up survey. Variable "female" refers to the household's primary caregiver, who completed the survey. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

**Table A.2: Summary Statistics and Balance Tests (Non-Attritors): Pre-Intervention Parenting Practices (PAFAS Subscales)**

	All households			Control households			Treated households			Treated vs. control	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Parental consistency	261	10.89	1.98	105	10.7	1.78	156	11.02	2.1	0.31	0.19
Coercive parenting	261	12.87	3.03	105	12.86	3	156	12.88	3.06	0.03	0.94
Positive encouragement	261	6	1.87	105	6.15	1.89	156	5.9	1.86	-0.25	0.29
Parent-child relationship	261	8.32	2.03	105	8.34	1.97	156	8.31	2.08	-0.04	0.89
Parental adjustment	261	10.93	2.57	105	10.89	2.65	156	10.97	2.52	0.08	0.8
Family relationships	261	7.76	2.39	105	7.55	2.18	156	7.9	2.51	0.35	0.23
Parental teamwork	261	2.31	3.05	105	1.91	2.87	156	2.58	3.15	0.67	0.08

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey, completed by the household's primary caregiver.

Notes: The table includes information only on households that completed the follow-up survey. Each row corresponds to a subscale of the PAFAS (Sanders et al., 2014) survey instrument, used to measure parenting practices among caregivers. Higher scores indicate more dysfunctional practices. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

**Table A.3: Summary Statistics and Balance Tests (Non-Attrititors): Child Characteristics and Pre-Intervention Parenting Practices (APQ Subscales)**

		All households			Control households			Treated households			Treated vs. control	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Demographic	Female	433	0.42	0.49	174	0.44	0.5	259	0.41	0.49	-0.04	0.44
	Age	433	10.7	2.78	174	10.87	2.8	259	10.58	2.77	-0.28	0.3
	School grade	433	5.45	2.58	174	5.53	2.58	259	5.39	2.59	-0.14	0.59
Risk factors	Alcohol consumption	433	0.15	0.36	174	0.15	0.36	259	0.15	0.36	0.01	0.89
	Bullying at school	433	0.35	0.48	174	0.34	0.48	259	0.35	0.48	0	0.95
Alabama Parenting Questionnaire (APQ)	Involvement	395	22.59	6.07	161	22.2	6.36	234	22.85	5.86	0.66	0.3
	Positive parenting	433	11.97	4.11	174	11.53	4.13	259	12.27	4.08	0.74	0.05
	Supervision and monitoring	433	17.33	4.95	174	17.29	4.85	259	17.35	5.03	0.06	0.9
	Inconsistent discipline	433	11.9	3.26	174	12.16	3.28	259	11.73	3.24	-0.42	0.2
	Corporal punishment	396	7.17	2.4	161	7.19	2.42	235	7.16	2.39	-0.03	0.9

Source: Authors' elaboration based on information collected in the baseline (pre-intervention) survey, completed by children between 6 and 15 years old.

Notes: The table includes information only on children from households that completed the follow-up survey. The variable "alcohol consumption" takes value 1 if child reported alcohol consumption in the last six months. The variable "bullying at school" takes value 1 if the child reported bullying events at school in the previous six months. Each row in APQ section corresponds to a subscale of the Child Global Report of the APQ (Shelton et al., 1996) survey instrument used to assess children's perceptions of caregiving practices. Higher scores indicate more dysfunctional practices. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.



**Table A.4: Tests for Differential Attrition across Treatment and Control Groups**

		(1)	(2)	(3)
Treatment (T)		-0.00515 (0.0485)	-0.00132 (0.0490)	0.990 (0.722)
Interacted Terms	Sociodem. x treatment	Female x T	-0.306 (0.205)	
		Age (years) x T	-0.0115* (0.00641)	
		Age first child (yrs.) x T	-0.0158 (0.0145)	
		# of children x T	0.0417 (0.0342)	
	Marital status x treatment	Married and cohabiting x T	-0.319 (0.367)	
		Common-law relationship x T	-0.409 (0.366)	
		Single x T	-0.163 (0.279)	
		Visiting Relationship x T	-0.128 (0.423)	
		Separated x T	0.0192 (0.371)	
		Widowed x T	-	
	Educational level x treatment	None x T	-	
		Primary x T	0.0694 (0.171)	
		High school x T	0.0632 (0.146)	
		College / vocational x T	0.106 (0.194)	
		University x T	0.318 (0.202)	
	Monthly Income (JMD) x T		4.55e-07 (3.58e-06)	
	PAFAS subscales x treatment	Parental consistency x T	-0.0107 (0.0284)	
		Coercive parenting x T	-0.0138 (0.0167)	
		Positive Encouragement x T	-0.0375 (0.0310)	
		Parent-Child Relationship x T	0.0476 (0.0296)	
		Parental Adjustment x T	0.0105 (0.0220)	
		Family Relationships x T	-0.00568 (0.0227)	
		Parental Teamwork x T	0.0517 (0.0352)	
Covariates		No	Yes	Yes
Interacted terms				
	F (21, 320)	N/A	N/A	1.12
	Prob > F	N/A	N/A	0.33

Notes: The outcome variable for the three models is a binary variable indication follow-up survey completion. The first model's (Column 1) only covariate is the treatment indicator variable. The second model (Column 2) includes household characteristics and pre-intervention PAFAS scores as additional covariates (coefficients omitted). The third model also includes the interaction between model 2 covariates and treatment status. Heteroscedasticity-robust standard errors in parentheses. Stars denote statistical significance: \*\*\* p < 0.01; \*\*p < 0.05; \* p < 0.1.

**Table A.5: Post-Intervention Parenting Practices (PAFAS Subscales)**

	All households			Control households			Treated households			Treated vs. control	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Parental consistency	261	10.68	2.17	105	10.61	2.19	156	10.72	2.16	0.11	0.68
Coercive parenting	261	12.54	2.83	105	13.07	2.74	156	12.18	2.84	-0.89	0.01
Positive encouragement	261	5.04	1.7	105	5.3	2	156	4.87	1.46	-0.43	0.06
Parent-child relationship	261	8.4	2.11	105	8.22	2.36	156	8.52	1.92	0.3	0.28
Parental adjustment	261	10.14	2.42	105	10.1	2.52	156	10.17	2.35	0.08	0.8
Family relationships	261	7.76	2.41	105	7.5	2.52	156	7.93	2.33	0.42	0.17
Parental teamwork	261	2.07	2.83	105	2.1	2.83	156	2.04	2.84	-0.05	0.89

Source: Authors' elaboration based on information collected in the follow-up (post-intervention) survey, completed by the household's primary caregiver.

Notes: Each row corresponds to a subscale of the PAFAS (Sanders et al., 2014) survey instrument, used for measuring parenting practices among caregivers. Higher scores indicate more dysfunctional practices. The first two columns (all households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

**Table A.6: Intervention's Impact on Coercive Parenting Items (PAFAS) - Binary Outcomes**

		Levels model			Difference-in-differences model		
		(1)	(2)	(3)	(4)	(5)	(6)
1[Parent often shouts or gets angry]	$\hat{\beta}$	-0.278***	-0.296***	-0.297***	-0.259***	-0.296***	-0.249***
	SE	(0.0566)	(0.0574)	(0.0598)	(0.0757)	(0.0574)	(0.0805)
1[Parent often tries to make child feel bad]	$\hat{\beta}$	-0.0824	-0.0785	-0.0954	-0.0962	-0.0785	-0.138*
	SE	(0.0617)	(0.0619)	(0.0651)	(0.0787)	(0.0619)	(0.0830)
1[Parent often spansks (beats) child]	$\hat{\beta}$	-0.109*	-0.118**	-0.138**	-0.132	-0.118**	-0.150*
	SE	(0.0571)	(0.0563)	(0.0606)	(0.0808)	(0.0563)	(0.0835)
1[Parent often argues with child]	$\hat{\beta}$	0.00366	0.00530	-0.0543	0.0255	0.00530	-0.0286
	SE	(0.0572)	(0.0553)	(0.0615)	(0.0696)	(0.0553)	(0.0766)
1[Parent often gets annoyed with child]	$\hat{\beta}$	0.0256	0.00328	-0.0277	-0.0516	0.00328	-0.0889
	SE	(0.0602)	(0.0607)	(0.0634)	(0.0846)	(0.0607)	(0.0889)
# Observations		261	256	243	261	256	243
Covariates		No	Yes	No	No	Yes	No
IPW weighting		No	No	Yes	No	No	Yes

Notes: Each row presents the estimation of the intervention's impact on an item of the PAFAS (Sanders et al., 2014) survey instrument. Based on the responses to each item, we define a binary (dummy) variable that takes value 1 if caregivers respond that they adopt the coercive practice when their children misbehave "often" or "all the time". Negative coefficients indicate a reduction in the likelihood (in percentage points) of observing these coercive parenting practices frequently. Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\* p < 0.01; \*\*p < 0.05; \* p < 0.1

**Table A.7: Post-Intervention Parenting Practices (APQ Subscales)**

	All households			Control households			Treated households			Treated vs. control	
	N	Mean	SD	N	Mean	SD	N	Mean	SD	Diff.	p-val
Involvement	342	20.85	6.02	128	21.05	6.15	214	20.73	5.95	-0.31	0.68
Positive parenting	372	12.15	3.43	140	12.22	3.5	232	12.1	3.39	-0.12	0.77
Supervision and monitoring	372	15.42	5.24	140	15.06	5.01	232	15.64	5.38	0.59	0.29
Inconsistent discipline	372	14.55	3.31	140	14.39	3.53	232	14.65	3.17	0.26	0.49
Corporal punishment	342	6.58	2.5	128	6.79	2.47	214	6.46	2.52	-0.33	0.24

Source: Authors' elaboration based on information collected in the follow-up (post-intervention) survey, completed by children between 6 and 15 years old.

Notes: Each row in APQ section corresponds to a subscale of the Child Global Report of the APQ (Shelton et al., 1996) survey instrument used to assess children's perceptions of caregiving practices. Higher scores indicate more dysfunctional practices. The first two columns (All Households) include information on households in the treatment and the control groups. The last two columns (treated vs. control) report the result (coefficient and p-value) of a difference in means test between treatment and control groups.

Table A.8: Intervention's Impact on Parenting Practices (PAFAS Subscales, Bottom 75 percentile)

		Levels model			Difference-in-differences Model		
		(1)	(2)	(3)	(4)	(5)	(6)
Parental consistency	$\hat{\beta}$	0.0183	-0.00794	-0.0304	0.126	-0.00721	0.134
	SE	(0.153)	(0.155)	(0.170)	(0.147)	(0.140)	(0.163)
	N	165	161	155	165	161	155
Coercive parenting	$\hat{\beta}$	-0.222	-0.268*	-0.322**	-0.169	-0.220*	-0.210
	SE	(0.146)	(0.147)	(0.159)	(0.138)	(0.121)	(0.154)
	N	183	180	171	183	180	171
Positive encouragement	$\hat{\beta}$	-0.0649	-0.0822	-0.111	0.0787	-0.0746	0.0808
	SE	(0.136)	(0.135)	(0.153)	(0.131)	(0.122)	(0.144)
	N	162	159	155	162	159	155
Parent-child relationship	$\hat{\beta}$	0.185	0.179	0.159	0.202	0.171	0.176
	SE	(0.127)	(0.118)	(0.150)	(0.127)	(0.113)	(0.146)
	N	193	189	182	193	189	182
Parental adjustment	$\hat{\beta}$	0.00840	-0.0535	-0.0003	-0.0610	-0.0491	-0.0021
	SE	(0.143)	(0.140)	(0.150)	(0.126)	(0.128)	(0.133)
	N	188	184	175	188	184	175
Family relationships	$\hat{\beta}$	0.145	0.143	0.118	0.170	0.125	0.201
	SE	(0.133)	(0.140)	(0.142)	(0.127)	(0.122)	(0.134)
	N	180	176	170	180	176	170
Parental teamwork	$\hat{\beta}$	-0.0967	-0.110	-0.0568	-0.119	-0.0940	-0.0783
	SE	(0.134)	(0.119)	(0.146)	(0.110)	(0.102)	(0.123)
	N	189	186	175	189	186	175
Covariates		No	Yes	No	No	Yes	No
IPW weighting		No	No	Yes	No	No	Yes

Notes: Each row presents the estimation of the intervention's impact on a subscale of the PAFAS (Sanders et al., 2014) survey instrument among the subpopulation with highest (top 25 percentile) scores at baseline (i.e., worse practices). Negative values indicate an improvement in parenting practices. Outcome variables are standardized (using mean and standard error of the control group). Heteroscedasticity-robust standard errors reported in parentheses. Stars denote statistical significance: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ .