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DISCUSSION  
PAPER N°  
IDB-DP-00987

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December 2022



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# The Replication of a Parenting Behavioral Change Communication Intervention during the COVID-19 Pandemic: Too Much or Too Little Information?

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## Motivation

There is consensus that experiences during the early years strongly predict long-term outcomes, such as employment, health, education, and wages. In this context, to improve such experiences, governments have increasingly invested in early childhood care and education programs, parenting programs (such as home visiting or in health centers or groups) and parental leave policies. The need to scale up parenting programs has also driven the implementation of interventions based on communication technology and Behavioral Economics.

## Supporting and strengthening parenting: the *Crianza Positiva* program

*Crianza Positiva* is a preventive and highly protocolized intervention program that aims to strengthen parenting competencies with the goal of promoting child development in the early years. The program was originally implemented in Uruguay's Early Childhood and Family Care Centers (CAIF) and includes two components: an 8-session intensive face-to-face parenting workshop and a 6-month long e-messaging intervention that seeks to reinforce and take to action the competencies introduced in the workshops. The structure of the messages was designed to address behavioral biases associated with low parental investment.

The first edition of the e-messaging program took place in 2018 (CP2018). Results from the evaluation of the program show it increased the frequency of parental involvement with the child, improved the quality of caregiver-child interaction and led to better language stimulation (Bloomfield et al., 2021; Balsa et al., 2021).

## Adapting the *Crianza Positiva* e-messages to the pandemic context

Replication of early childhood programs can shed new light into their potential for scalability. With this in mind and adding to the importance of connecting with families during the COVID-19 pandemic, the Universidad de Montevideo in partnership with CAIF centers and the IDB launched a new edition of the *Crianza Positiva* e-messaging program during the second half of 2020 (CP2020). While the themes of the messages were similar to those in the previous implementation, the setting of the new intervention was different from that observed in 2018.

Unlike CP2018 and because of the pandemic, families participating in the CP2020 intervention did not attend a face-to-face parenting workshop prior to the launch of the messages. In addition, during the pandemic families were exposed to more stressors than in 2018 and overloaded by virtual stimuli. Because face-to-face participation in early childhood centers was interrupted by the outbreak of the virus, centers assumed an active policy of communication with the families through mobile phones, potentially competing with *Crianza Positiva* for families' attention. (a report on different hybrid approaches adapted during the pandemic can be found in [Rubio-Codina and Lopez Boo, 2022](#)).

The number and topics covered by the messages, and their sequence remained the same as in 2018. However, messages were longer in 2020 than in 2018: the average message had around 690 characters in 2020 relative to 330 in 2018. The longer messages intended to compensate the fact that parents had not attended the *Crianza Positiva* workshop and were being exposed to many parenting concepts for the first time. In addition, a few messages underwent important adjustments to work on aspects linked to the quarantines.

Finally, families in the CP2020 implementation showed higher levels of education, were more likely to work and less likely to receive government assistance than in 2018.

Table 1. *Crianza Positiva* setting

Dimension	CP2018	CP2020
<i>Population</i>		
Mother completed high school	29%	47%
Household beneficiary of Family Allowances	66%	55%
Region: Montevideo (capital city)	21%	9%
<i>Structure</i>		
Pyramidal structure (workshops+messages)	Yes	No
<i>Message intervention: design</i>		
Messages: quantity	72	72
Messages: frequency (per week)	3	3
Messages: topics (parental competencies)	Relational, formative, protective and reflective	Relational, formative, protective and reflective
Messages: average length (characters)	330	690
Messages: covers atypical topics	No	Yes (COVID-19 pandemic)
Overlap with CAIF messaging	No	Yes

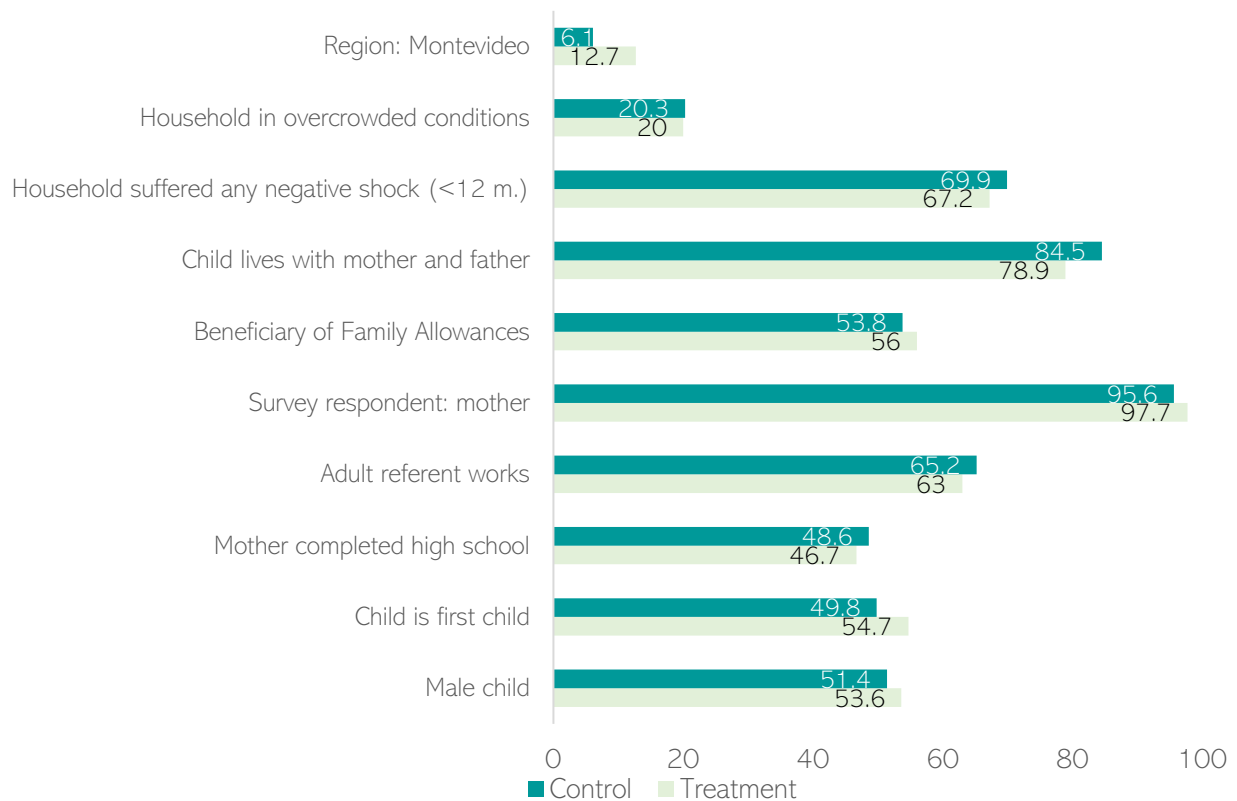
*Note: The definition of relational, formative, protective and reflective parental competences is taken from Gómez and Muñoz (2014). Relational competences are based on promoting appropriate affection and beneficial socioemotional development in infants. Formative competences aim at favoring aspects related to teaching and socialization. Protective competences focus on protecting basic human rights and preserve children's integrity. Reflective competences involve parental examination of the observational development of their children with the purpose of improving and strengthening parental competences.*

## The sample

We conducted a Randomized Control Trial to test the effectiveness of CP2020 on the frequency of caregiver involvement with the child, the quality of adult-child interaction, and language stimulation, areas where CP2018 had impacts. Randomization took place at the CAIF level. The final sample consisted of 687 families who were enrolled in the *Experiencias Oportunas workshops* in CAIF centers at the beginning of 2020, 348 in the treatment arm and 339 in the control arm. These families come from 14 regions (departments) of the country.

On average, children from those families were 24 months old and their mothers were 31 years old. Figure X summarizes other characteristics of the participating households. **Characteristics were balanced across treated and control families.**

Figure 1. Sample characteristics (%)



## Data

We carried out three waves of surveys. In the first one, we collected information on baseline characteristics of the households, while waves 2 and 3 aimed to obtain information on the household environment, parenting practices, and the child's and main caregiver's well-being (see figure X).

Figure X. Outcomes

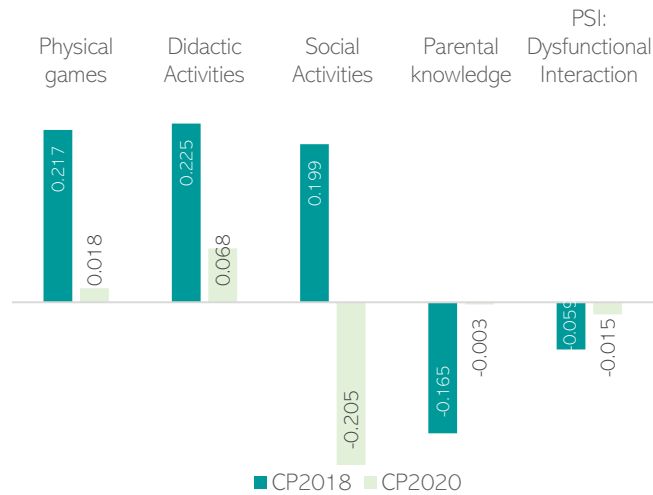
Parental involvement	<ul style="list-style-type: none"><li>• Frequency of parental involvement in physical play, didactic activities and socialization by using a version of the scale proposed by Cabrera et al. (2004)</li></ul>
Quality of the caregiver's investment, information and co-parenting	<ul style="list-style-type: none"><li>• Positive Parenting Scale (E2P) of Gómez-Muzzio and Contreras-Yevenes (2019) - bonding competences subscale</li><li>• Items of the Parent-Child Conflict Tactics Scale for Parents and Children by Straus (1998) (PCCTS): levels of aggression towards the child and child maltreatment</li><li>• Caregivers' beliefs and perceptions about child rearing by including 10 true or false items referring to a set of child behaviors</li><li>• Co-parenting: we asked about the sharing of childrearing tasks</li></ul>
Well-being of the caregiver	<ul style="list-style-type: none"><li>• The dysfunctional parent-child interaction subscale of the Parental Stress Index proposed by Abidin (1995) (PSI)</li><li>• The Center for Epidemiological Studies Depression Scale (CES-D) in its reduced version (Andresen, 1994).</li></ul>

## The impact of *Crianza Positiva* e-messaging in the pandemic context

We found no statistically significant effects of the message intervention on most of the dimensions assessed. There is only a positive and significant impact (at 1% significance level) on the likelihood of equal cooperation in child-rearing tasks within the household (a 35% increase compared to the mean for controls), and a drop (albeit weak) on the average frequency of parental involvement in socialization activities. In a pandemic setting, this effect is not necessarily an adverse result: it may indicate that the intervention contributed to internalize the risks of exposure to the virus in children.

These results contrast with those documented in the evaluation of the first edition of the *Crianza Positiva* messaging program, which reported statistically significant increases in parental involvement and in the quality of child-caregiver interaction. Figure X shows the size of some of the effects found in both editions for the parental involvement outcomes. Except for socialization activities, the directions of the effects are the same in both editions, but in the case of physical games and didactic activities, the relationship between treatment exposure and the outcome in question is very weak and statistically insignificant.

Figure X. Intention to Treat (ITT) effects (in standard deviations)



*Note: The bars show the magnitude of the Ordinary Least Squares estimates that arise from a simple model regressing the outcome of interest by the Intention to Treat variable, the stratum used in the randomization, and a set of covariates.*

## CP2018 vs CP2020: what can explain the differences in results?

- First, the absence of a complementary workshop to the messages may have reduced the meaning of the messages and the openness of families to the program. Results from other evaluations of hybrid modalities in Latin America find similar results (Rubio-Codina and Lopez Boo, 2022). The null results could suggest that a stand-alone e-messaging program would not be enough to encourage and maintain parenting practices over time, and that the effectiveness of e-messages relies heavily on the complementarity with parenting workshops. These results are important to inform future blended or hybrid (i.e. presential and virtual) approaches to ECD interventions that are being considered by many countries in LAC.
- Second, messages were longer in 2020. While more characters may have helped them better understand the underlying proposals, parents may have also been more reluctant to read them.
- Third, both treatment and control centers made frequent use of WhatsApp messages to communicate with families during the intervention period due to the pandemic. Treated families were subject to several types of messages that could have divided their attention, especially in a pandemic context with multiple stressors and distractors. The coexistence of messages reflects the importance of "attention management" already underscored by Simon (1971).

## Policy Implications

Messages may not be welfare enhancing when they compete strongly with stimuli that add responsibilities and time demands to already constrained recipients. Understanding the stimuli that compete for the attention and the cognitive "bandwidth" of the receiver can be important when implementing an



intervention; not only because of their mitigating effect, but also because they could even be harmful when the subject is either too constrained or the target of too much information.

Therefore, for future interventions, we envision three significant recommendations:

- Messages should be part of comprehensive programs that include in-person sessions.
- Consider the length of the messages for parents whose attention is divided by various distractors.
- Be aware of the target audience's characteristics and the stimuli to which they are exposed.