

# CLUSTER RANDOMIZED TRIAL OF MULTICOMPONENT SCHOOL-BASED PROGRAM IN MEXICO TO PREVENT BEHAVIORAL PROBLEMS AND DEVELOP SOCIAL SKILLS IN CHILDREN

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# BACKGROUND

Mental illness prevalence in children is 12.6% and 20%.

Delayed or absent treatment is associated with:

- School problems
- Drug use
- Risky lifestyles
- Delinquency
- Poor sexual and reproductive health
- Self Harm
- Poor self-care

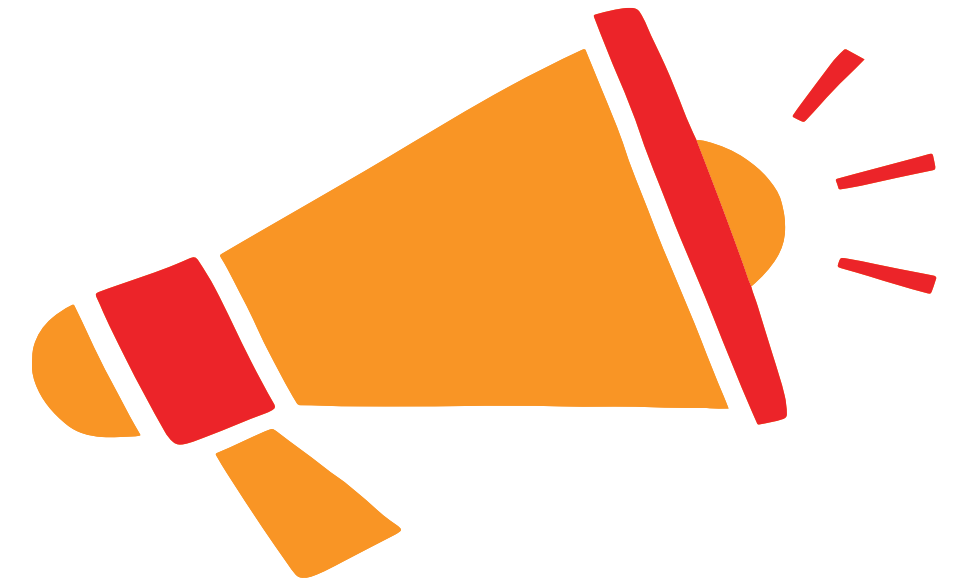
In Mexico, local estimates show that 15% of the child population nationwide has some mental health problem

A recent survey identified the following problems as the most prevalent in Mexico City adolescents:

- Learning problems
- Developmental delays
- anxiety disorders
- attention deficit
- Depression
- Substance use
- Suicide attempts



# The importance of early prevention and intervention



**Over time, problematic behaviours that begin in childhood can lead to pathology or high-cost disruptive behaviours in adolescence and adulthood.**

**The current gold standard is to move to multi-component interventions that involve a broader range of agents and context**

**Multi-component programs show greater effectiveness than interventions implemented alone. Programs are most effective when they target at-risk populations and are implemented at an early age by local leaders.**

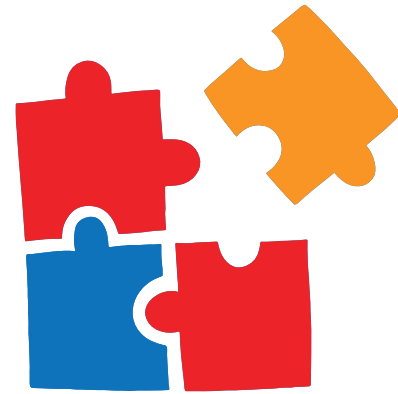
# OBJECTIVE

**This study evaluated the joint effectiveness of two interventions delivered alone and in combination to children and parents in Mexico City, on child behavioural problems and socioemotional skills, and caregivers' development of positive parenting strategies in public school environment involving multiple agents (teachers, caregivers and children)**

**Before the present research, both interventions were evaluated independently.**



# METHOD



## Design

Cluster- randomized trial of parallel groups with four conditions measured at baseline with three weeks follow-up assessments:

- **One post-treatment assessment at the end of the 12 weeks treatment phase**
- First follow-up assessment at 6 months after randomization
- Second follow-up at 9 months after randomization



## Participants

From four urban public schools in Mexico City

Total of 222 children and 237 caregivers met the inclusion criteria:

- Caregivers were mostly women (82.9%) with a mean age of 38.46
- Children had a mean age of 8.75 and 56.7% were boys



## Procedure

After ethical approval, teachers, caregivers and children were invited to information meetings. Informed consent was obtained.

Participants were assessed in February and June 2017, before and after intervention.

Children completed six self-report questionnaires, one per day, in group sessions that lasted between 30 and 60 minutes.

Caregivers answered self-report questionnaires in one or two sessions, each one lasting 60 min approx.

Compensations:  
Caregivers MX\$100/€5 per evaluation  
Children received pencil and water bottle  
Teachers MX\$150/€8 per module

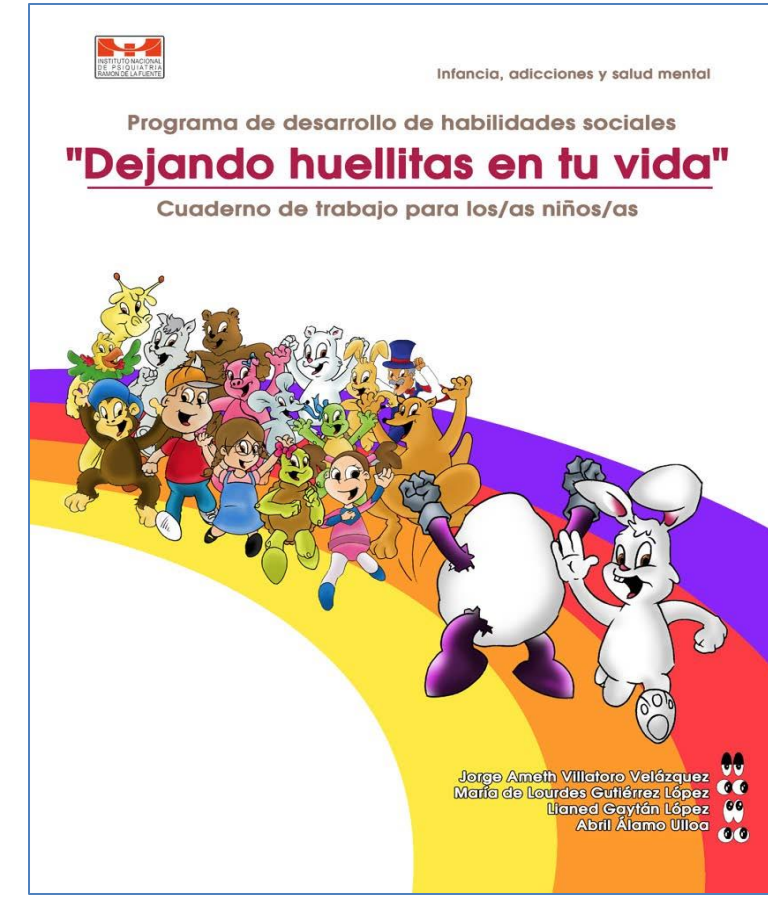
# Research Design





Leaving Traces on your Life

**Dejando Huellitas en tu Vida**



**Designed to develop socioemotional skills in 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> grade of Mexican elementary school (aged 7-10) using a universal, low-cost approach.**

**A team of teachers was trained to deliver this intervention.**

**Based on the development of social and emotional skills consisting of 12 sessions organized into 4 modules:**

- 1. Personal aspects of the child: appropriately expressing emotions, opinions and desires, and respecting these behaviours in others**
- 2. Child abuse and sexual abuse: identifying and preventing physical, psychological and sexual abuse.**
- 3. Relationship with the environment: developing and establishing socialisation through family communication and attachment to school**
- 4. Equity and Discrimination: promotion of non-discrimination and acceptance of self and others**



## Raising Children with Love: Promoting Harmony and Self-Improvement in Mexico

### Criando con Amor, Promoviendo Armonía y Superación en México (CAPAS-MX)

A **parent-focused** intervention that provides universal prevention and selective intervention for externalizing behaviour problems in children and adolescents through parent training.

Manualized intervention consists of 12 sessions that last approximately 1.5 hours each.

Parenting trainers use an active teaching methodology to promote skills development such as Role Playing and Modelling.

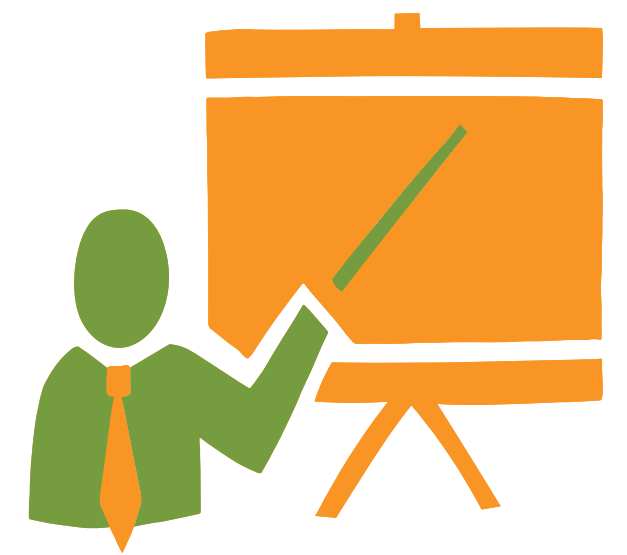
After each session, caregivers have an assignment to practice the skill and a phone call is made by a parenting trainer to follow up the home practice.

#### Parent Practices taught:

1. Positive Involvement: Devoting time to their children, demonstrating interest and affection in a positive interaction
2. Skills encouragement: using positive contingencies to promote skills development or reinforcement
3. Effective Discipline: discouraging inappropriate behaviour through small negative sanctions, establishing clear rules
4. Monitoring and Supervision: Parents knowledge of the child's friends, places they frequent, activities and behaviours
5. Family Problem-Solving: Strategies to establish agreements, rules, and consequences through contingency acts



# Results



# Pre and Post intervention on Caregivers' Results by Condition

Variables	Intervención							
		CMx	H	H-CMx	C	p	Diferencias entre condiciones	
		CAPAS-Mx	Huellitas	Huellitas-CAPAS-MX	CONTROL			
		Media	Media	Media	Media			
<b>Externalized Problems</b>	Problemas externalizados	Pre	56.71	57.6	50.35	52.75		
		Post	53.24	56.71	46.03	51.90	.001	H-CMx < H, C
<b>Involvement</b>	Involucramiento	Pre	4.16	4.10	4.29	4.21		
		Post	4.33	4.14	4.49	4.32		
<b>Problem Solving</b>	Solución de Problemas	Pre	3.94	3.85	4.03	3.93		
		Post	4.21	3.98	4.39	4.14	0.046	-
<b>Discipline</b>	Disciplina	Pre	3.61	3.58	3.69	3.66		
		Post	3.91	3.68	4.06	3.78	.001	(CMx, H-CMx > C) y (H-CMx > H)
<b>Supervision</b>	Supervisión	Pre	4.20	4.17	4.32	4.23		
		Post	4.39	4.17	4.49	4.29	0.016	-
<b>Skills Encouragement</b>	Habilidades de aliento	Pre	3.91	3.80	3.88	3.95		
		Post	4.27	3.95	4.25	4.04	.001	(CMx, H-CMx > C) y (H-CMx > H)
<b>Social Adaptation</b>	Adaptación social	Pre	3.21	3.16	3.35	3.28		
		Post	3.34	3.20	3.55	3.30	.001	H-CMx > C, H
<b>Emotional Control and Prosocial Behavior</b>	Control emocional y conducta prosocial	Pre	3.18	3.22	3.42	3.35		
		Post	3.28	3.25	3.52	3.36	0.003	H-CMx > C, H

The Multivariate Analysis of Covariance (MANCOVA), predicting post-scores for measures based on the intervention (four experimental conditions), while controlling for the child's gender and the baseline scores.

All statistical analyses was conducted in R 3.6.1 (R Core Team 2019)

# Pre and Post intervention on Children Results by Condition

Variables		Intervención				p	Diferences between conditions
		CMx	H	H-CMx	C		
		CAPAS-Mx	Huellitas	Huellitas-CAPAS-Mx	Control		
		Media	Media	Media	Media		
<b>Ignoring Distractions</b>	Ignorar distracciones	Pre	2.62	2.48	2.56	2.50	
		Post	2.63	2.49	2.61	2.47	
<b>Mediation</b>	Mediación	Pre	2.38	2.34	2.40	2.45	
		Post	2.17	2.50	2.48	2.35	.001
<b>Discrimination</b>	Discriminación	Pre	2.74	2.64	2.76	2.79	
		Post	2.82	2.72	2.80	2.74	
<b>Family Affect Expression</b>	Expresión afectiva familia	Pre	2.64	2.60	2.70	2.71	
		Post	2.58	2.64	2.72	2.70	
<b>Identification of Emotions</b>	Identificación de emociones	Pre	2.21	2.27	2.29	2.35	
		Post	2.22	2.33	2.45	2.32	.022
<b>Affective Expression</b>	Expresión afectiva	Pre	2.33	2.32	2.44	2.50	
		Post	2.32	2.38	2.45	2.49	

The Multivariate Analysis of Covariance (MANCOVA), predicting post-scores for measures based on the intervention (four experimental conditions), while controlling for the child's gender and the baseline scores.

All statistical analyses was conducted in R 3.6.1 (R Core Team 2019)

# Results



Caregivers in the multicomponent condition reported significantly lower scores in child externalizing problems and higher scores in discipline, skills encouragement, social adaptation, emotional control and prosocial behaviours than caregivers in control groups

Improvements in parents use of effective discipline and skills encouragement in the CAPAS-MX group over the control group

Children in the Huellitas condition showed a decrease in mediation and identification of his/herself emotions



## findings SUPPORT THE IMPLEMENTATION OF THE MULTICOMPONENT INTERVENTION IN PUBLIC SCHOOL SETTINGS

Multicomponent interventions are effective to reduce strength and development of risk factor that cause problems among children or act individually on the link with risk factors that are already present. They also serve to promote healthy psychosocial development, that prevents future antisocial behaviour. (Costello et al. 2006; Durlak et al. 2011; O'Connell et al. 2009; PAHO 2003; Sandler et al. 2014; Weare and Nind 2011).

When evaluating the effect of combining the interventions, we can see a greater decrease in externalizing problems score and significant increases in emotional control, and prosocial behaviour scores in comparison to individual interventions and the control group.

The results found in this study with universal population regarding the increase in children's mediation, social adaptation and emotional control are important since these variables are protective factors for violence and drug use (Villatoro Velázquez et al, 2016).

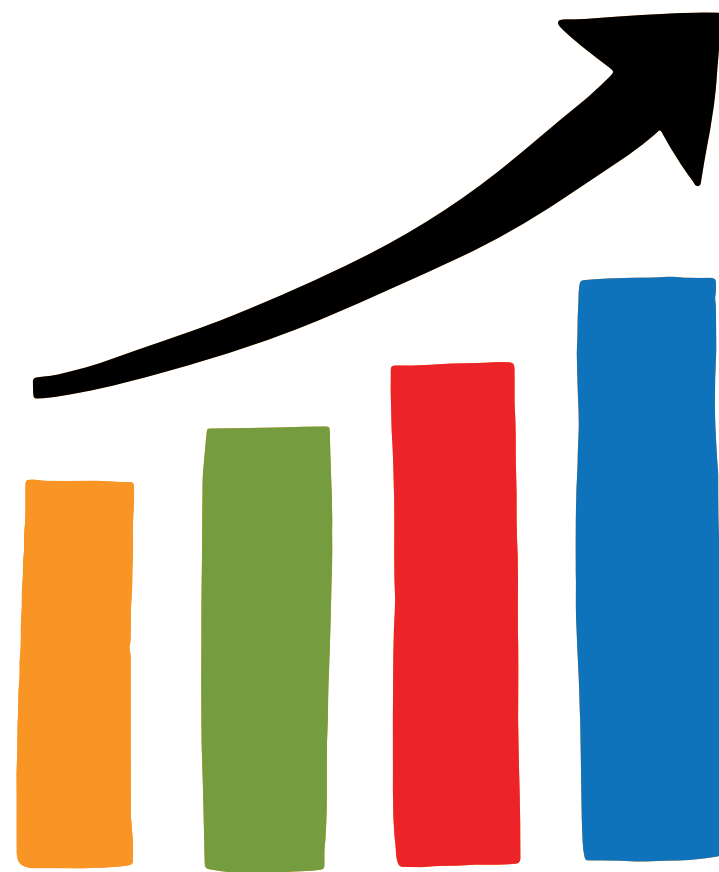
# tHANK YOU!

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## effects OF THE INTERVENTION ON CHILDREN

The similar MANCOVA for the size of child-reported post-scores revealed significant effects in mediation  $F(3, 191)=6.58$ ,  $p<.001$  and identification of emotions  $F(3,191)=2.75$ ,  $p=.044$ .

## Effect size

To measure the impact of the interventions, we estimated the effect sizes of each condition compared to the control group and the number of variables showing significant effects from the intervention.

Caregiver variables, the Huellitas-CAPAS-Mx condition showed at least a medium effect size in five variables

The CAPAS-Mx condition showed a medium effect size in two variables, whereas in the Huellitas condition, no effect was observed in the caregivers' variables.

# Elementos

