

# Violent Discipline and Child Behavior: Short- and Medium-term Effects of Virtual Parenting Support to Caregivers in Jamaica

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NBER Children's Meetings, Spring 2023

March 3, 2023

## Motivation

- Approx. 3 in 4 children aged 2 to 4 worldwide regularly subjected to violent discipline by caregivers (UNICEF, 2017)
- Has short- and long-term implications:
  - Development and sense of self-worth in short-term (Boden et al., 2007; Fry et al., 2018; Mersky and Topitzes, 2010)
  - Risky behaviors (Hamby et al., 2011); school absenteeism, aggression, mental distress, and social problems (Lansford et al., 2002) as teenagers
  - Worse labor market outcomes (Doyle Jr and Aizer, 2018; Currie and Spatz Widom, 2010), involvement in crime (Currie and Tekin, 2012; Sviatschi, 2022) in adulthood
- Very little known on what works to decrease violent parenting
  - Results from global systematic review show high-quality parenting programs *at scale* needed globally (Jeong et al., 2021)

## Key Question

Can a virtually delivered, scalable information intervention on positive parenting practices improve caregivers attitudes and behaviors related to violence against children?

## Preview of Methodology

- Digital adaptation of Irie Homes in-person intervention (Francis and Baker-Henningham, 2020)
- RCT of virtually delivered, scalable information intervention on positive parenting practices in Jamaica
- Key features:
  - SMSes supplemented with App + virtual information sessions
  - Scalable: worked with Jamaica's Early Childhood Commission

## Preview of Short-term ITT Impacts

- Strong first stage of the information intervention
  - 0.52 SD impact on knowledge index
  - Lower take-up of App and virtual information sessions
- Effects on caregiver's violent attitudes and behaviors
  - 0.2 SD improvement in attitudes toward physical and psychological violence against children index
  - 0.12 SD reduction in physical and psychological violence against target child index
- Effects on child outcomes
  - 0.17 SD reduction in emotional problems index for children

## Preview of Medium-term ITT Impacts

- Persistent first-stage impacts
  - 0.38 SD impact on knowledge index
- Persistent effects on caregiver's violent attitudes and behaviors
  - 0.14 SD improvement in attitudes to physical violence against children index
  - 0.13 SD reduction in physical violence against target child index
- (New) improvements in caregiver's mental health
  - 0.12 SD reduction in depression, 0.16 SD reduction in anxiety, 0.16 SD reduction in parental stress
- Effects on child emotional problems not persistent

## Contributions to Literature

- ① First virtually-delivered intervention to caregivers with the primary goal of reducing violence against children
- ② Differs in content and mode of delivery from other parenting programs (Carneiro et al., 2023; Attanasio et al., 2021; Barrera et al., 2020; Fernald et al., 2019)
- ③ Contribute to scant evidence on digital parenting interventions since most are in person
  - Amaral et al. (2021): Digital parenting intervention in El Salvador
  - Low income settings: widespread availability of mobile phones; high social inequalities in access to parenting programs; VAC is widely accepted as necessary
  - Effectiveness not well understood (Naslund et al., 2017; Kola, 2020)
- ④ Contribute to broader literature on economics of caregiving (Doyle et al., 2018; Maselko et al., 2019; Justino et al., 2020)

# Agenda

Intervention & Experimental Design

Data & Summary Statistics

Empirical Strategy

Short- and Medium-Term Impacts

Conclusion



## Information Intervention: Digitally Adapted Irie Homes Toolbox

- Irie Homes: parenting practices that reduce child behavior problems (Francis and Baker-Henningham, 2020)
- Four key concepts:
  - ① Build positive parent-child relationships (e.g. praise)
  - ② Prevent misbehavior (e.g. modelling appropriate behavior)
  - ③ Manage misbehavior (e.g. setting limits)
  - ④ Emotional self-regulation



# Information Intervention: Digitally Adapted Irie Homes Toolbox

- 10 key topics delivered over 10 weeks

1. Praising your child

6. Reasons why children misbehave

2. Introducing Irie Time

7. Managing your emotions + helping children understand their emotions

3. Giving your child positive attention throughout the day

8. How to manage your child's misbehavior using withdraw attention + redirect

4. Giving clear instructions

9. How to manage your child's misbehavior using consequences + chillax

5. Teaching your child to follow instructions

10. Review of the Irie Tower

## Information Intervention: Digitally Adapted Irie Homes Toolbox

- Primary Mode of Delivery: 3 SMS messages per week over 10 weeks
- Example: Session 4 – *Giving Clear Instructions*
  - SMS 1: *Try to give your child clear instructions and praise them whenever they follow your instruction. Praise encourages positive behaviour. [Link to App](#)*
  - SMS 2: *As parents we know our child best. We know when they are most likely to misbehave. This can help us to prevent bad behaviour. [Link to App](#)*
  - SMS 3: *Irie Challenge this week: Give your child clear instructions and praise them when they do what you say. Have Irie Time every day. Awesome Job. [Link to App](#)*

# Information Intervention: Digitally Adapted Irie Homes Toolbox

- Supplementary Modes of Delivery:
  - ① App with weekly videos, Irie Challenge, Irie Tower
    - No phone data cost to user

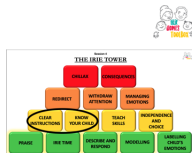
## THE APP: WEEK 4



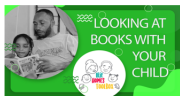
Clear Instructions Video



Week 4 - Irie Challenge



The Irie Tower - Session 4



Looking at Books Video



My School Day Picture Book

- ② Weekly virtual information sessions with ECC officer
  - GoogleMeet video-calls, 8-9 participants per group

# Recruitment of Participants

- Partnered with TrendMedia (Digicel) for recruitment
  - Primary mode of recruitment: SMS [▶ More details](#)
  - Secondary modes of recruitment:
    - Social media (inc. Loop Campaign, Google Display Network)
    - ECC push through principals
- Eligibility criteria:
  - ① Caregiver of a child aged 2-6 years
  - ② Access to smartphone or tablet
  - ③ Interested in participating in the study

## Enrollment of Participants

- 6,011 completed enrollment survey → 1,113 eligible

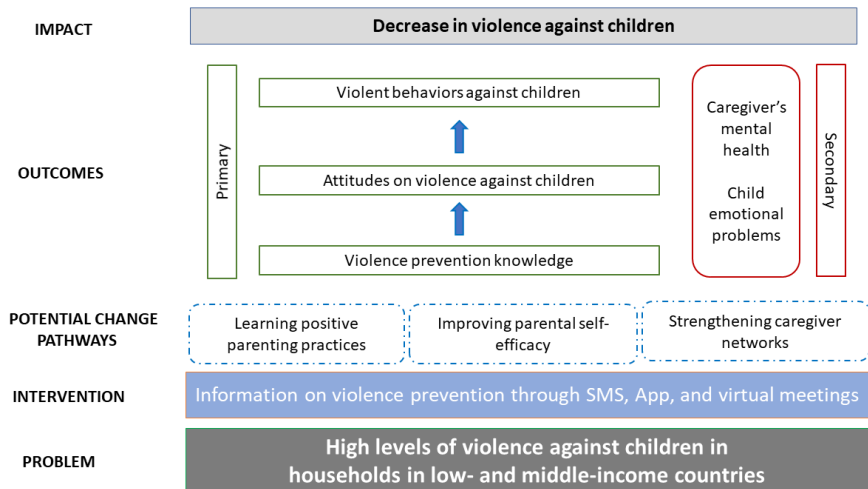
Strata	Frequency	Percentage
SMS - female	875	78.62
SMS - male	163	14.65
Principals or social media - female	70	6.29
Principals or social media - male	5	0.45
Total	1,113	100.00

▶ External validity

# Experimental Design

- Key Dates:
  - Baseline Survey: Aug 2021
  - Intervention: Sep – Nov 2021
  - Short-term Survey: Dec 2021
  - Medium-term Survey: Sep 2022
- Stratified individual-level randomization: 556 Control + 557 Treatment
- To keep control group engaged: caregivers received 3 SMSes per week with COVID-19 prevention tips [▶ Examples](#)
- AEA RCT Registry: <https://doi.org/10.1257/rct.8266>

# Conceptual Framework





# Outcomes & Mechanisms

## ① Caregiver outcomes

- Attitudes to violence against children
  - Physical and psychological violence
- Violence against children
  - Physical and psychological violence
  - Focus on “target” child but also study other children in the HH
- Caregiver mental health
  - Parental stress, depression, and anxiety

## ② Child behavior

- Conduct and emotional problems

## ③ Mechanisms

- Parental self-efficacy
  - Discipline and acceptance
- Caregiver's social networks
  - Parenting and borrowing support

# Summary Statistics

## Caregiver and Child Characteristics & Outcomes

Variable	Control			Treatment			P-value (2) - (5)
	(1) N	(2) Mean	(3) SD	(4) N	(5) Mean	(6) SD	
<b><i>Panel A. Caregiver's characteristics</i></b>							
Age	556	33.405	7.727	557	33.070	7.247	0.443
Gender - female (%)	556	0.856	0.351	557	0.853	0.355	0.634
Education level completed	556	14.220	2.761	557	14.445	2.733	0.166
Employed (%)	476	0.784	0.412	499	0.792	0.407	0.700
Income in the past month (USD)	429	910.306	1,166.991	448	855.201	1,062.471	0.489
Total number of children 17 or below	556	1.950	1.021	557	1.873	1.044	0.213
<b><i>Panel B. Child's characteristics'</i></b>							
Target child 2-6 years old - Age	556	4.171	1.429	557	4.070	1.425	0.236
Target child 2-6 years old - Female (%)	556	0.480	0.500	557	0.496	0.500	0.623
<b><i>Panel C. Primary Outcomes</i></b>							
Avg. # of days with discipline - target child	556	1.324	1.226	557	1.337	1.160	0.867
Avg. # of days with discipline - oldest child	556	1.055	0.805	557	1.051	0.784	0.916
(%) agreement with violent attitudes	556	17.814	21.353	557	18.686	22.016	0.492
<b><i>Panel D. Secondary Outcomes</i></b>							
(%) Conduct problems	556	41.655	27.063	557	41.939	26.966	0.849
(%) Emotional problems	556	25.719	25.177	557	26.032	23.830	0.824
(%) High depression	556	19.964	40.009	557	18.133	38.564	0.440
(%) High anxiety	556	13.309	33.998	557	17.056	37.646	0.084
F-test of joint significance (p-value)							0.947

## Empirical Strategy

- To study ITT impacts, estimate ANCOVA specification:

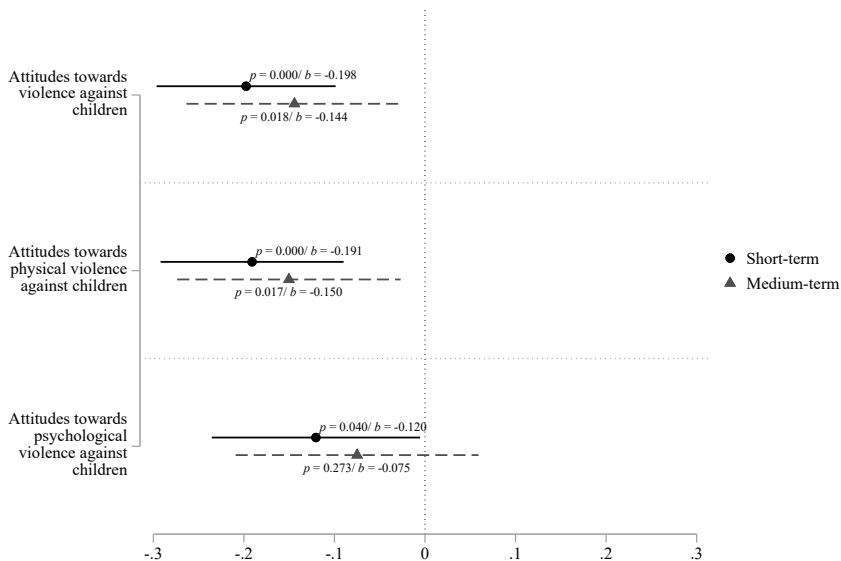
$$Y_{i,t} = \beta_0 + \beta_1 T_i + \beta_2 Y_{i,t-1} + \gamma_s + \varepsilon_{i,t}$$

- $Y_{i,t}$  – outcome variable of caregiver/child  $i$  (in the short or medium-term)
- $T_i$  – indicator variable capturing assignment of  $i$  to the treatment
- $Y_{i,t-1}$  – baseline outcome variable
- $\gamma_s$  – stratum fixed effects
- Estimate heteroskedasticity-robust standard errors
- Summary index tests following Anderson (2008) for M.H.T.
- Robustness check: Double LASSO for selection of controls

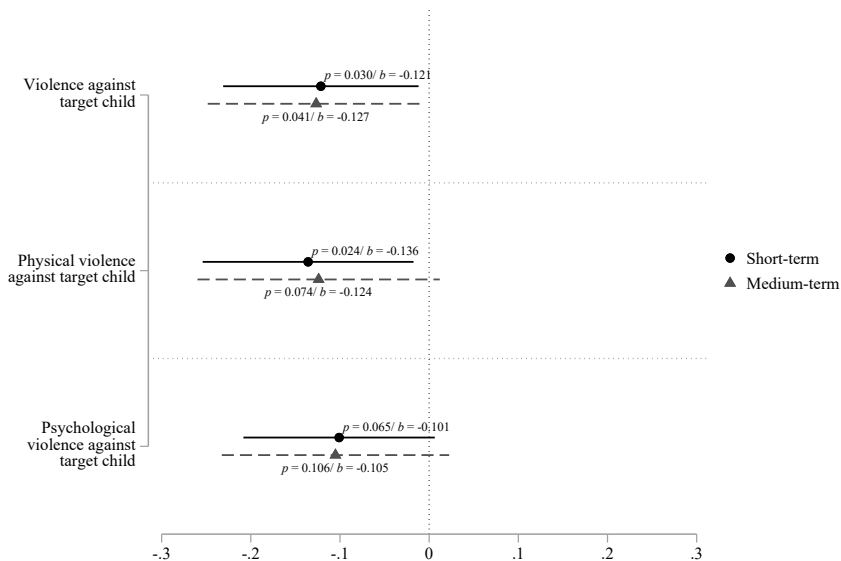
# First stage: ITT Impacts on Learning

	Information module								
	Praising children helps	Imp. for parents to play w/ child	Clear instructions help	Understand why child misbehaves	Calm down before disciplining	Withdraw attention from child's whining	Redirect rather than reprimand	Consequences and timeout appropriate	Information module (index)
<i>Panel A: Short-term</i>									
Treatment	0.189*** (0.05)	0.059 (0.04)	0.224*** (0.05)	0.063* (0.04)	-0.011 (0.04)	0.624*** (0.07)	0.278*** (0.05)	0.080** (0.04)	0.525*** (0.07)
Observations	978	979	978	974	974	971	973	971	979
R <sup>2</sup>	0.02	0.00	0.03	0.00	0.00	0.08	0.03	0.01	0.05
Control mean	4.13	4.27	3.98	4.29	4.38	2.73	3.74	4.16	-0.00
<i>Panel B: Medium-term</i>									
Treatment	0.104** (0.05)	0.039 (0.04)	0.248*** (0.06)	-0.058 (0.04)	-0.026 (0.04)	0.480*** (0.08)	0.165*** (0.06)	0.071 (0.04)	0.394*** (0.08)
Observations	698	699	699	699	698	691	691	697	699
R <sup>2</sup>	0.01	0.00	0.03	0.00	0.00	0.05	0.01	0.01	0.04
Control mean	4.196	4.290	3.989	4.408	4.450	2.743	3.810	4.164	0.000

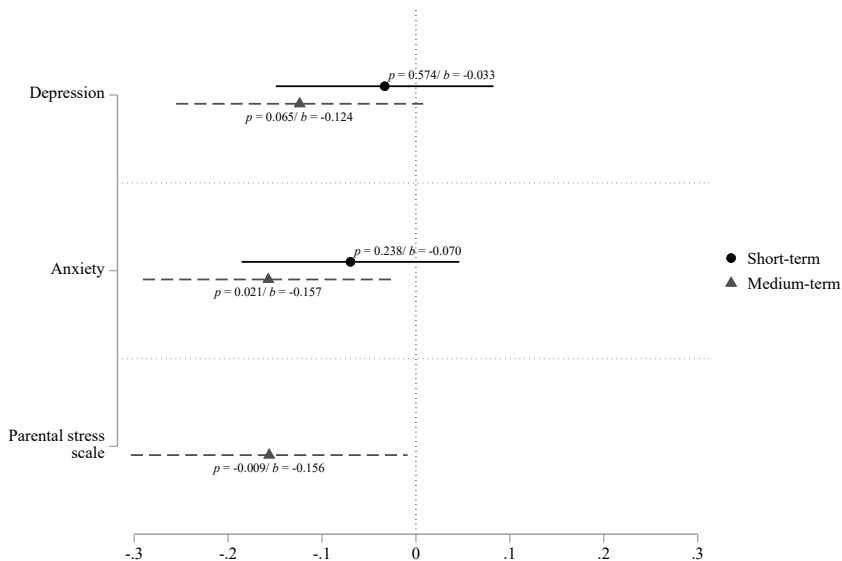
# ITT Impacts on Caregiver Attitudes to VAC



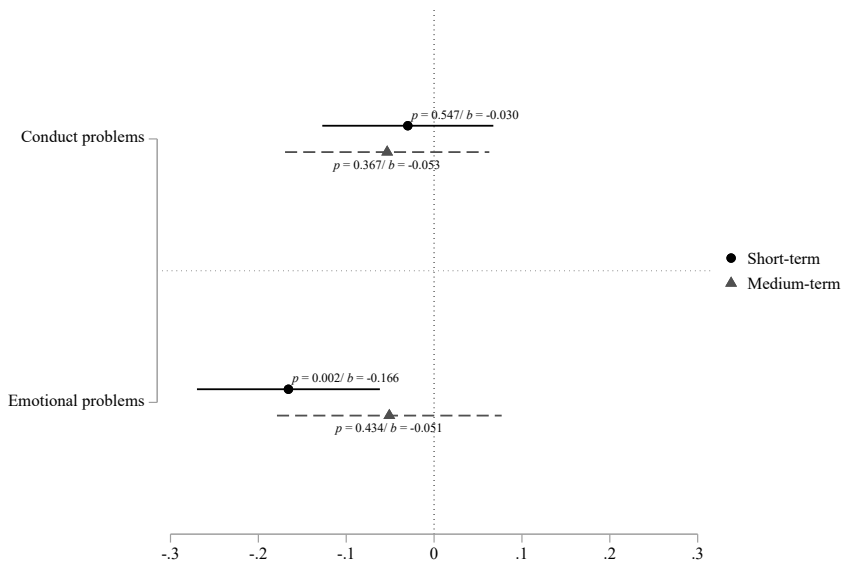
# ITT Impacts on Caregiver Behaviors Relating to VATC



# ITT Impacts on Caregiver Depression, Anxiety, & Stress



# ITT Impacts on Child Behaviors





# Take-up of Intervention Components

Variable	Mean	Std. Dev.	Min.	Max.	N
<i>Panel A. SMS Delivery (Admin Data)</i>					
Sent SMS (%)	92.28	6.42	69	98	30
<i>Panel B. SMS/WhatsApp Receipt (Survey Data)</i>					
Received SMS/WhatsApp (%)	91.38	28.09	0	100	499
Read SMS/WhatsApp if received (%)	96.94	17.23	0	100	458
Found the SMS/WhatsApp useful if read (%)	98.20	13.32	0	100	444
<i>Panel C. App usage (Admin Data)</i>					
Number of sessions accessed	1.04	1.85	0	10	557
Total time in sessions (mins)	6.94	15.58	0	75	557
<i>Panel D. Virtual sessions (Admin Data)</i>					
Number of sessions attended	4.55	3.44	0	10	557

► Dose-response regressions

# Addressing Alternative Interpretations

- ① Potential bias due to experimenter demand effects
  - No treatment impacts on SDB (Marlowe-Crowne, 1960)
  - Results robust to use of SDB control
  - No heterogeneous treatment impacts by SDB
- ② Potential displacement of violence toward other children
  - Include violence against eldest child aged 7-12
  - Impacts very similar when we study all children
- ③ Potential bias due to differential attrition
  - Differential attrition during short-term survey
  - Lee bounds (Lee, 2009)
  - Balanced panel estimation → very similar results
- ④ Sensitivity from selection of controls
  - Double LASSO for selection of controls

# Robustness Checks

## Controlling for Social Desirability Bias

	Primary hypotheses			
	(1)	(2)	(3)	(4)
	SDB	Attitudes towards violence against children	Violence against target child	Violence against children in the household
<i>Panel A: Short-term</i>				
Treatment		-0.327*** (0.06)	-0.157** (0.07)	-0.177*** (0.06)
SDB (index)		-0.023 (0.03)	-0.032 (0.03)	-0.061** (0.03)
Observations		674	657	889
R <sup>2</sup>		0.26	0.27	0.26
Control Mean		0.075	0.053	0.048
<i>Panel B: Medium-term</i>				
Treatment	-0.016 (0.08)	-0.145** (0.06)	-0.132** (0.06)	-0.151*** (0.05)
SDB (index)		-0.047 (0.03)	-0.019 (0.03)	-0.020 (0.03)
Observations	700	696	677	909
R <sup>2</sup>	0.01	0.26	0.18	0.18
Control Mean	0.000	-0.000	0.001	-0.010

# Robustness Checks

## Heterogeneity by Social Desirability Bias

	Primary hypotheses		
	(1) Attitudes to violence against children	(2) Violence against target child	(3) Violence against children in the household
<i>Panel A: Short-term</i>			
Treatment	-0.307*** (0.08)	-0.115 (0.11)	-0.188** (0.09)
High SDB score	-0.030 (0.10)	-0.093 (0.10)	-0.155* (0.09)
Treatment × High SDB score	-0.039 (0.12)	-0.090 (0.14)	0.019 (0.12)
Treat + Treat × High SDB score	-0.346*** (0.09)	-0.205** (0.09)	-0.169** (0.08)
Observations	674	657	889
<i>Panel B: Medium-term</i>			
Treatment	-0.243*** (0.09)	-0.128 (0.09)	-0.165** (0.08)
High SDB score	-0.223** (0.09)	-0.138 (0.10)	-0.138 (0.09)
Treatment × High SDB score	0.198* (0.12)	-0.009 (0.13)	0.029 (0.11)
Treat + Treat × High SDB score	-0.045 (0.08)	-0.138* (0.08)	-0.137* (0.07)
Observations	696	677	909

## Addressing Alternative Interpretations

- ① Potential bias due to experimenter demand effects
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- ② Potential displacement of violence toward other children
  - ▶ Figure
  - Include violence against eldest child aged 7-12
  - Impacts very similar when we study all children
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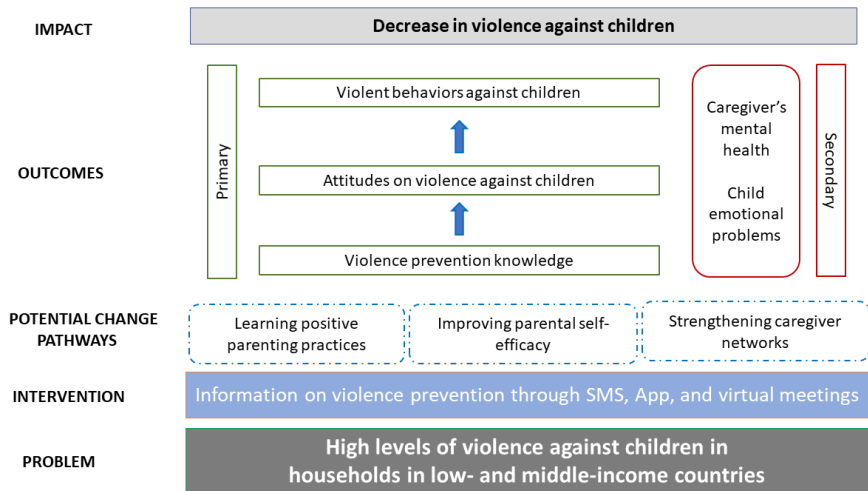
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# Addressing Alternative Interpretations

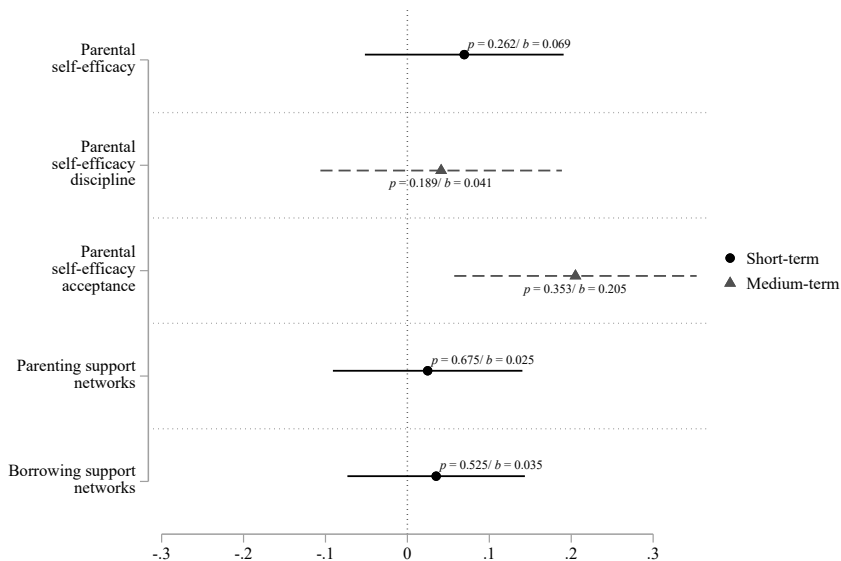
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# Conceptual Framework





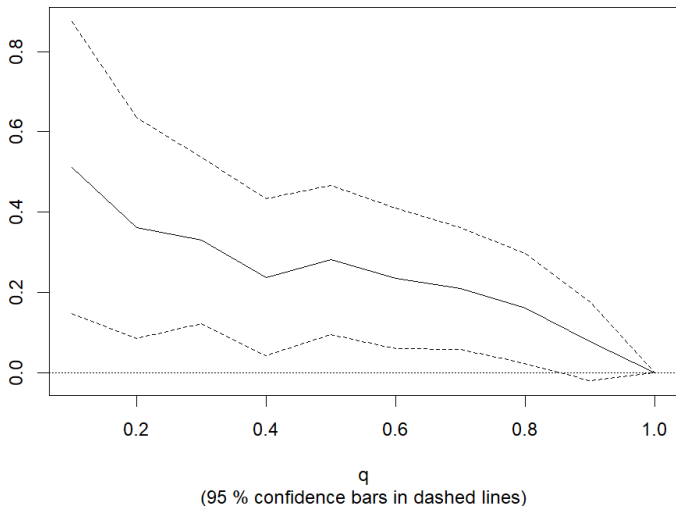
# Mechanisms



# Heterogeneity in Treatment Impacts

## Targeting Operator Characteristic

Pooled Outcome: Attitudes towards VAC



► Information Index-CATE

► Violence Against Target Child-CATE

► Violence Against Children-CATE

# Heterogeneity in Treatment Impacts on Attitudes to VAC

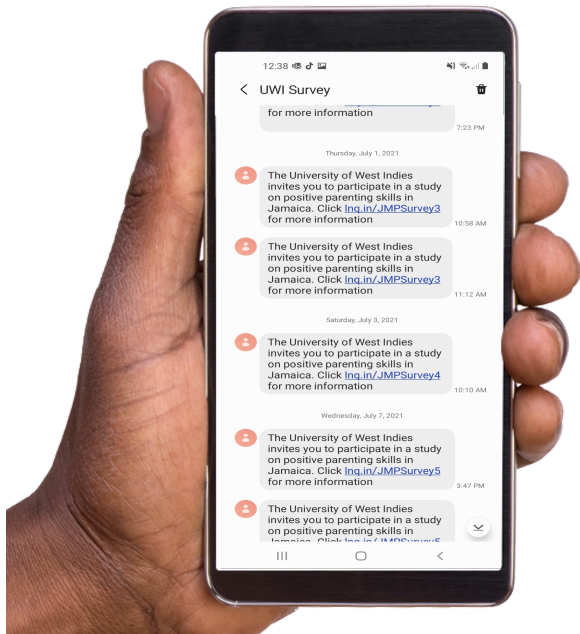
	(1) Attitudes to VAC	(2) Attitudes to VAC	(3) Attitudes to VAC	(4) Attitudes to VAC	(5) Attitudes to VAC
<i>Panel A: Short-term</i>					
Treatment	-0.241*	-0.213**	-0.099*	-0.094	-0.107
	(0.13)	(0.09)	(0.06)	(0.07)	(0.07)
Treatment × Female caregiver	0.051				
	(0.15)				
Treatment × High income		0.027			
		(0.11)			
Treatment × Worse attitudes to VAC			-0.185*		
			(0.10)		
Treatment × More conduct problems				-0.203**	
				(0.10)	
Treatment × More emotional problems					-0.175*
					(0.10)
Observations	977	774	977	977	977
<i>Panel B: Medium-term</i>					
Treatment	-0.058	-0.181**	-0.032	-0.213**	-0.198**
	(0.17)	(0.11)	(0.07)	(0.09)	(0.08)
Treatment × Female caregiver	-0.100				
	(0.18)				
Treatment × High income		0.102			
		(0.14)			
Treatment × Worse attitudes to VAC			-0.206*		
			(0.12)		
Treatment × More conduct problems				0.136	
				(0.12)	
Treatment × More emotional problems					0.111
					(0.12)
Observations	696	555	696	696	696

## Conclusion

- Experimental evidence of a virtually delivered information intervention on positive parenting practices
- Important results for policy given the low-cost, scalable nature of the intervention ▶ Intervention Costs
  - Strong SMS take-up → ↑ knowledge index
  - ↓ attitudes to VAC → ↓ VAC
  - ↓ depression + anxiety + stress for caregivers
  - Impacts persist 9 months after end of intervention
  - ↑ parental self-efficacy (self-acceptance) is a likely mechanism

# Thank You!

# Enrollment of Participants



# Enrollment of Participants

**TREND**

## JAMAICAN PARENTING STUDY

Researchers from the University of the West Indies are conducting a study on parenting in Jamaica. The study has 3 components: an eligibility checklist and 2 phone surveys. Once you have completed the eligibility checklist below and are deemed eligible, you will be invited to participate in the phone surveys. For each phone survey completed, you will receive phone credit of US\$2.00 in SMS as a token of gratitude.

All responses are anonymous and you can withdraw your participation at any time.

Click below to start the checklist if you choose to continue.

**START THE ELIGIBILITY CHECKLIST**

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**TREND**

## ELIGIBILITY CHECKLIST

Please register a profile or sign in below to participate in the Eligibility Checklist.

### JOIN FREE OR SIGN IN

+ 27 local mobile number

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**TREND**

→

**TREND**

## ELIGIBILITY CHECKLIST

In what parish do you live?

- Clarendon
- Hanover
- Kingston
- Manchester
- Portland
- Saint Andrew
- Saint Ann
- Saint Catherine
- Saint Elizabeth
- Saint James
- Saint Mary
- Saint Thomas
- Trelawny

→

**TREND**

## ELIGIBILITY CHECKLIST

- Saint Mary
- Saint Thomas
- Trelawny
- Westmoreland
- I don't live in Jamaica

Do you agree to be called by phone to complete the surveys and receive additional information, if you are eligible to the study?

- Yes
- No

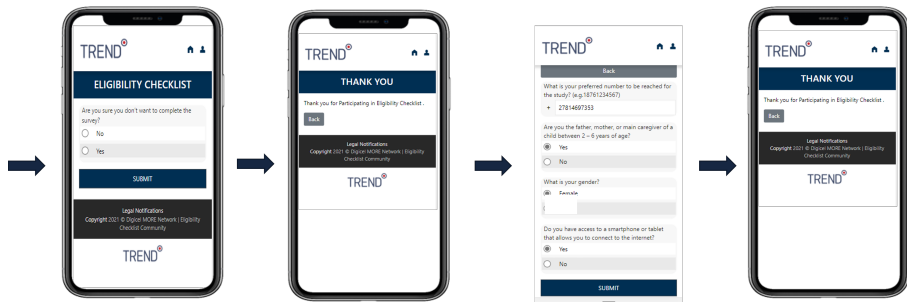
**SUBMIT**

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**TREND**

▶ Return to recruitment

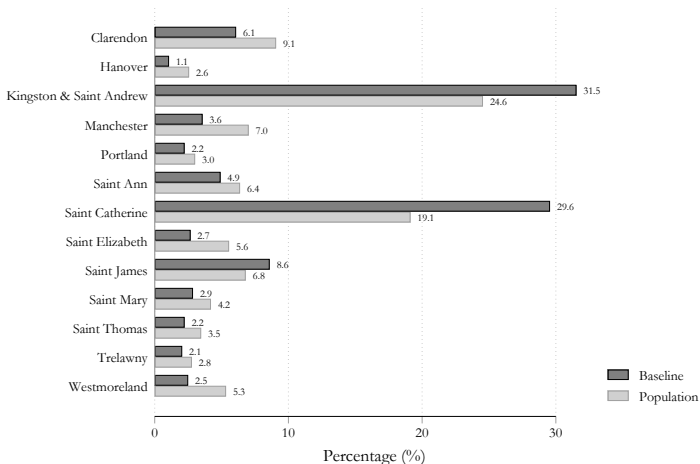
# Enrollment of Participants



▶ Return to recruitment



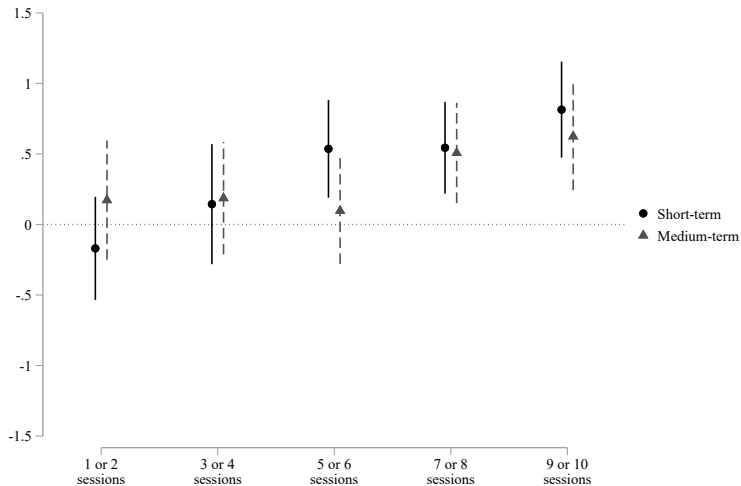
# External Validity: Distribution of Participants vs Population



▶ [Return to External Validity](#)

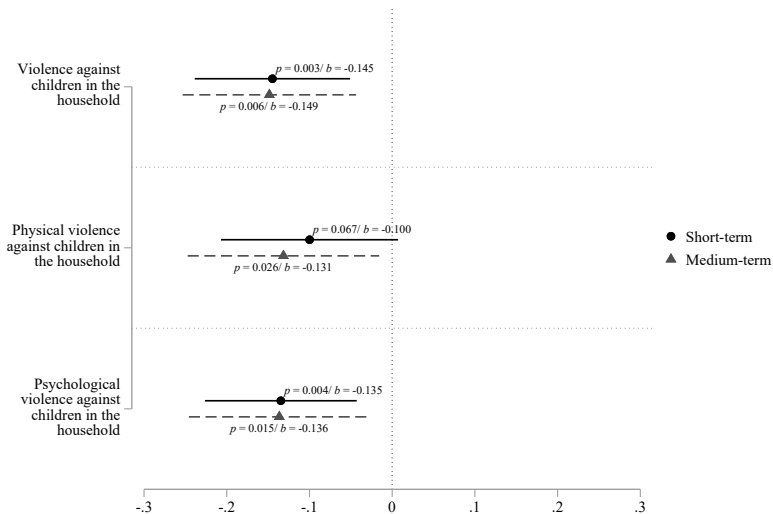
# Dose-response Regressions

## Dose-response Regressions on Learning by Number of Sessions Attended



▶ Return to Take-up

# ITT Impacts on Caregiver Behaviors Relating to VAC



# Attrition Analysis

	First follow-up		Second follow-up	
	(1) In endline $\beta$ /se	(2) In endline $\beta$ /se	(3) In endline $\beta$ /se	(4) In endline $\beta$ /se
Treatment	0.047** (0.02)	-0.090 (0.18)	0.008 (0.03)	-0.273 (0.24)
Age		0.032 (0.00)		0.008** (0.00)
Female		0.037 (0.10)		-0.119 (0.12)
Education level completed		0.007 (0.01)		0.013* (0.01)
Marital status - married (%)		-0.019 (0.04)		-0.049 (0.05)
Employed (%)		-0.041 (0.03)		-0.112** (0.05)
Income in the past month (USD)		-0.000 (0.00)		-0.000** (0.00)
Household total size		-0.007 (0.01)		0.015 (0.01)
Total number of children 17 or below		0.021 (0.02)		0.006 (0.03)
Food insecurity - Eating less (%)		0.032 (0.04)		-0.112** (0.05)
Viol. against target child (index)		-0.004 (0.02)		0.020 (0.02)
Caregiver involve. in play and learning activ. (index)		-0.007 (0.01)		-0.003 (0.02)
Depression (index)		0.006 (0.02)		0.027 (0.02)
Anxiety (index)		-0.017 (0.02)		-0.016 (0.02)
Conduct problems (index)		0.019 (0.02)		0.024 (0.02)
Emotional problems (index)		-0.033 (0.02)		-0.120 (0.02)
Att. to violence against children (index)		-0.001 (0.02)		0.004 (0.02)
Treatment $\times$ Age		0.003 (0.00)		0.004 (0.00)
Treatment $\times$ Female		-0.033 (0.07)		0.050 (0.09)
Treatment $\times$ Education level completed		0.039 (0.01)		0.031 (0.01)
Treatment $\times$ Marital status - married (%)		-0.024 (0.05)		-0.038 (0.07)
Treatment $\times$ Employed (%)		0.021 (0.05)		0.057 (0.07)
Treatment $\times$ Income in the past month (USD)		-0.000 (0.00)		0.000 (0.00)
Treatment $\times$ Household total size		-0.009 (0.02)		-0.016 (0.02)
Treatment $\times$ Total number of children 17 or below		0.004 (0.03)		0.039 (0.04)
Treatment $\times$ Food insecurity - Eating less (%)		-0.070 (0.05)		-0.102 (0.07)
Treatment $\times$ Viol. against target child (index)		0.007 (0.02)		-0.027 (0.03)
Treatment $\times$ Caregiver involve. in play and learning activ. (index)		0.020 (0.02)		0.011 (0.03)
Treatment $\times$ Depression (index)		-0.025 (0.02)		-0.023 (0.03)
Treatment $\times$ Anxiety (index)		-0.010 (0.02)		0.009 (0.03)
Treatment $\times$ Conduct problems (index)		-0.016 (0.02)		-0.017 (0.03)
Treatment $\times$ Emotional problems (index)		0.023 (0.02)		0.014 (0.03)
Treatment $\times$ Att. to violence against children (index)		-0.011 (0.02)		0.015 (0.03)
Constant	0.843*** (0.02)	0.684*** (0.15)	0.633*** (0.02)	0.377* (0.20)
Observations	1113	1113	1113	1113
R <sup>2</sup>	0.01	0.04	0.00	0.06
Q test pvalue		0.897		0.916

# Robustness Checks

Lee (2009) Bounds for Attrition

	Primary hypotheses			
	(1) Attitudes to violence against children (index) $\beta$ /se	(2) Violence against target child (index) $\beta$ /se	(3) Violence against children in the household (index) $\beta$ /se	(4) Caregiver involvement in play and learning activ. (index) $\beta$ /se
Treatment				
lower	-0.301*** (0.07)	-0.291*** (0.08)	-0.202*** (0.07)	-0.049 (0.08)
upper	-0.168*** (0.06)	-0.110 (0.08)	-0.161** (0.06)	0.141 (0.09)
Observations	1111	1095	1273	1105

▶ Return

# Robustness Checks

## Double LASSO for Selection of Controls

	Primary hypotheses			
	(1) Attitudes to violence against children (index)	(2) Violence against target child (index)	(3) Violence against children in the household (index)	(4) Caregiver involvement in play and learning activ. (index)
<i>Panel A: First follow-up</i>				
Treatment	-0.186*** (0.05)	-0.112** (0.06)	-0.132*** (0.05)	0.017 (0.06)
Observations	977	943	1265	945
# of controls selected	4	5	6	3
Control mean	-0.000	-0.000	0.003	0.000
<i>Panel B: Second follow-up</i>				
Treatment	-0.142** (0.06)	-0.107* (0.06)	-0.125** (0.05)	0.011 (0.07)
Observations	696	681	914	676
# of controls selected	3	4	5	3
Control mean	-0.000	0.000	-0.011	-0.000

▶ Return

## Data: Outcomes & Instruments

<b>Outcome</b>	<b>Instrument</b>
<i>1. Caregivers attitudes and behaviors</i>	
Violent discipline	UNICEF MICS
Attitudes to violence against children	ELP-World Bank Instrument
Caregiver involvement in play and learning	MICS-UNICEF
<i>2. Child behavior and development</i>	
Child behavior difficulties	SDQ (Conduct/emotional problems subscales)
Child development	ASQ (for 2 - 6 yo children).
<i>3. Caregiver's outcomes</i>	
Caregiver's mental health	Depression: PHQ-2 Anxiety: GAD-2
Parental self-efficacy	BPSES
Caregiver's social networks and economic anxiety	ELP-World Bank Instrument
<i>4. Other outcomes or measures</i>	
Attendance to virtual groups	ECC officers report
App use	TrendMedia report

[▶ Return to Data](#)

# Data: Survey Modules

Survey Modules	Baseline	First Follow up	Second Follow up
<b>Caregivers Outcomes</b>			
Attitudes to Violence Against Children	X	X	X
Violence (physical and psychological) against target child	X	X	X
Violence (physical and psychological) against eldest child	X	X	X
Depression, Sleep and Anxiety	X	X	X
Parental Stress Scale			X
Caregiver involvement in play and learning activities	X	X	X
<b>Child Behavior</b>			
Conduct and emotional problems (SDQ)	X	X	X
<b>Mechanisms</b>			
Brief Parental Self-Efficacy Scale (BPSES)		X	
Parental Self-Efficacy [From TOPSE - Discipline & Self-Acceptance]			X
Support networks	X	X	
<b>Caregiver and target child socio-demographic characteristics</b>			
Household Roster	X	X	X
Social Desirability Bias			X
<b>Intervention take up and learning</b>			
Information Module		X	X
Receipt of Parenting Support (+ take-up)		X	X

[▶ Return to Data](#)



# ITT Impacts on Caregivers Attitudes and Behaviors

	Primary hypotheses			
	Attitudes towards violence against children (index)	Violence against target child (index)	Violence against children in the household (index)	Caregiver involvement in play and learning activ. (index)
<i>Panel A: First follow-up</i>				
Treatment	-0.198*** (0.05)	-0.121** (0.06)	-0.145*** (0.05)	0.019 (0.06)
Observations	977	943	1265	945
R <sup>2</sup>	0.24	0.27	0.26	0.20
Control mean	-0.000	-0.000	0.003	0.000
<i>Panel B: Second follow-up</i>				
Treatment	-0.144** (0.06)	-0.127** (0.06)	-0.149*** (0.05)	0.006 (0.07)
Observations	696	681	914	676
R <sup>2</sup>	0.26	0.18	0.18	0.23
Control mean	-0.000	0.000	-0.011	-0.000

▶ Return

# ITT Impacts on Caregivers Attitudes and Behaviors (Subindices)

	Primary hypotheses			
	Attitudes towards violence (sub indices)		Violence against target child (sub indices)	
	Attitudes towards physical violence against children (index)	Attitudes towards psychological violence against children (index)	Physical violence against target child (index)	Psychological violence against target child (index)
<i>Panel A: First follow-up</i>				
Treatment	-0.191*** (0.05)	-0.120** (0.06)	-0.136** (0.06)	-0.101* (0.05)
Observations	974	961	920	942
R <sup>2</sup>	0.21	0.11	0.17	0.27
Control mean	-0.004	0.005	0.000	-0.000
<i>Panel B: Second follow-up</i>				
Treatment	-0.150** (0.06)	-0.075 (0.07)	-0.124* (0.07)	-0.105 (0.06)
Observations	694	685	676	681
R <sup>2</sup>	0.22	0.13	0.09	0.21
Control mean	-0.000	-0.014	0.017	0.008

▶ Return

## ITT Impacts on Child Behaviors

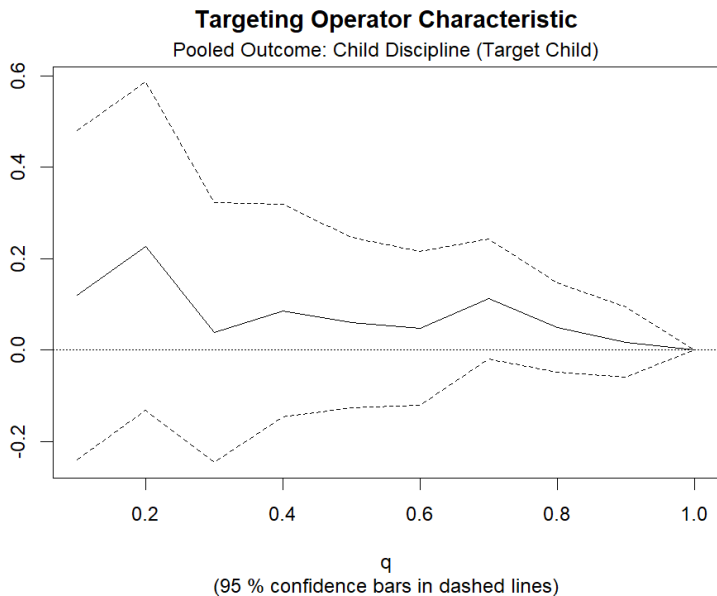
	Secondary hypotheses	
	Conduct problems (index)	Emotional problems (index)
<i>Panel A: First follow-up</i>		
Treatment	-0.030 (0.05)	-0.166*** (0.05)
Observations	961	961
$R^2$	0.40	0.23
Control mean	0.00	0.00
<i>Panel B: Second follow-up</i>		
Treatment	-0.053 (0.06)	-0.051 (0.07)
Observations	685	685
$R^2$	0.38	0.21
Control mean	0.000	0.000

## SMS Messages Sent to Control Group

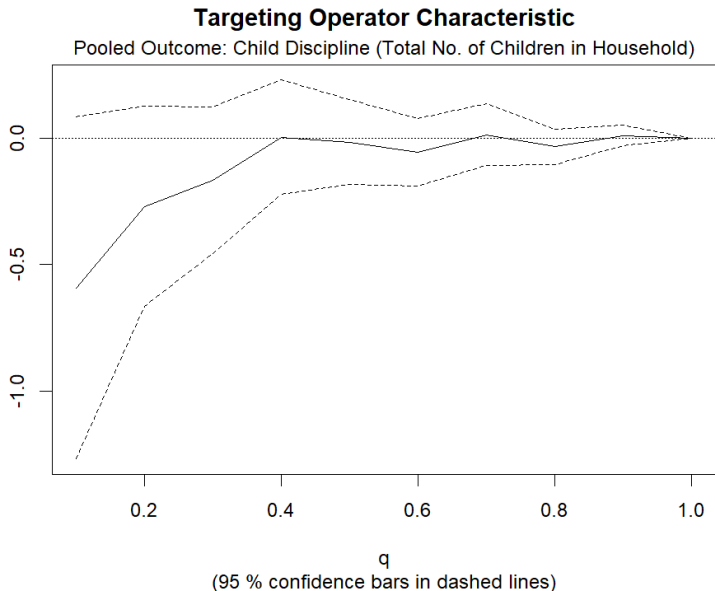
- Encourage children to wash their hands often with soap and water
- Wash your hands regularly when interacting with children
- Regularly disinfect or wash toys and resources of children

▶ Return

# Heterogeneity in Treatment Impacts



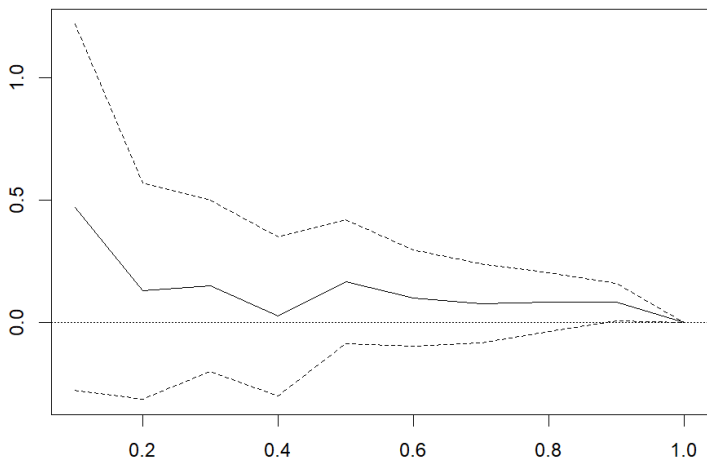
# Heterogeneity in Treatment Impacts



# Heterogeneity in Treatment Impacts

## Targeting Operator Characteristic

Pooled Outcome: Information Index



q  
(95 % confidence bars in dashed lines)

## Intervention Costs

Cost Category	Fixed Costs	Variable Costs	Total (USD)	Total per Caregiver Targeted (USD)
<b>SMS</b>	0.00	794.28	794.28	1.43
Costs to send SMSes	0.00	794.28		
<b>App</b>	30,194.51	0.00	30,194.51	54.21
Consultant and staff costs	3,562.75	0.00		
Costs associated with filming videos for the App	18,903.76	0.00		
KnowHub App development costs	7,728.00	0.00		
<b>Virtual sessions</b>	14,730.44	19,235.25	33,965.69	60.98
Consultant and staff costs	10,688.25	0.00		
Training materials	404.69	0.00		
Data plans to ECC officers to administer sessions	3,637.50	0.00		
Data plans to caregivers to participate in sessions	0.00	19,235.25		
<b>Total (USD)</b>	44,924.95	20,029.53	64,954.48	116.61
<b>Total per Caregiver Targeted (USD)</b>	80.66	35.96	116.61	

▶ Return

▶ Face-to-Face Costs



## Face to Face Intervention Costs

<b>Cost Category</b>	<b>Fixed Costs</b>	<b>Variable Costs</b>	<b>Total per Caregiver Targeted (USD)</b>
Staff costs	6907.67	0.00	60.07
Training staff costs and materials	539.45	0.00	19.17
Intervention materials for parents/children	0.00	25.06	25.06
Transportation of facilitators to conduct sessions	44.21	0.00	7.37
Data plans to caregivers to participate in sessions	0.00	12.28	12.28
<b>Total (USD)</b>	<b>7491.33</b>	<b>37.34</b>	<b>123.95</b>

[▶ Return](#)

## External Validity: Participants vs Representative Survey

	JLCS 2019					Study sample					p-value
	Mean	Sd	Min.	Max.	N	Mean	Sd	Min.	Max.	N	
<b><i>Panel A. Caregiver's characteristics</i></b>											
Age	36.9	11.41	15	80	190087	33.24	7.49	18	69	1113	0.000
Gender - female (%)	0.89	0.31	0	1	190087	0.85	0.35	0	1	1113	0.076
Education	13.35	2.64	4	22	190087	14.33	2.75	6	19	1113	0.000
Marital status - married (%)	0.21	0.41	0	1	190087	0.37	0.48	0	1	782	0.000
Employed (%)	0.62	0.48	0	1	190087	0.79	0.41	0	1	975	0.000
Household total size	4.61	1.86	2	14	190087	4.58	1.95	2	16	1113	0.793
Total number of children 17 or below	2.23	1.19	1	7	190087	1.91	1.03	1	8	1113	0.000
<b><i>Panel B. Child's characteristics</i></b>											
Target child 2-6 year old - age	4.16	1.37	2	6	190629	4.12	1.43	2	6	1113	0.651
Target child 2-6 year old - female (%)	0.47	0.50	0	1	190629	0.49	0.50	0	1	1113	0.518

▶ Return

▶ Distribution of participants vs Population