How Did a Strength-Based Video-Coaching Intervention Alter Parental Neurocognitive Mechanisms? Evidence From RCT Studies in Low-Income, High-Adversity Contexts

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OSF Preregistration

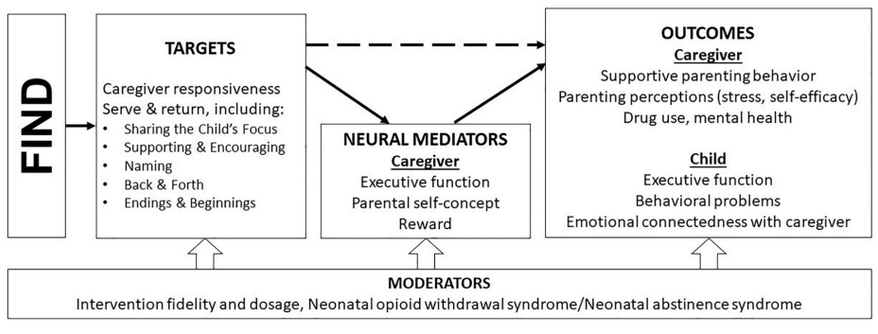
Filming Interactions to Nurture Development (FIND) Intervention

Parent coaching focuses on Serve and Return interactions

Source: https://developingchild.harvard.edu/resources/briefs/5-steps-for-brain-building-serve-and-return/

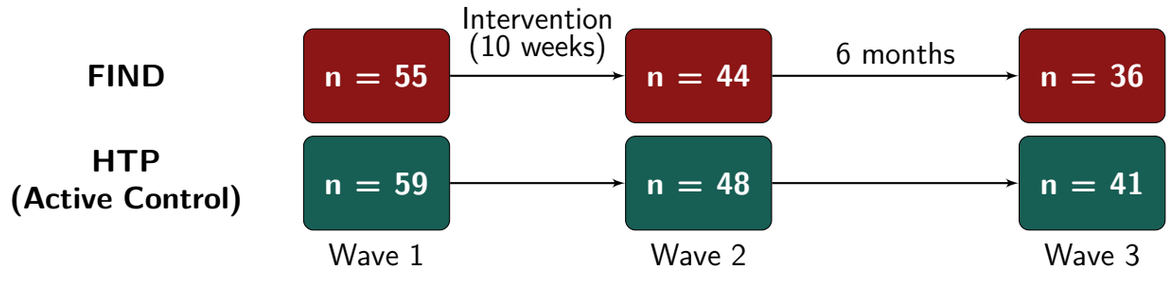
FIND is a 10-session, strengths-based, video-coaching intervention that aims to reinforce naturally occurring, developmentally supportive interactions (known as serve-and-return). FIND has previously been used in homes, child welfare supervised visitation, center- and home-based child care, and pediatric care settings.

Changes in parent brain mediate improvement in child outcomes



In earlier studies, FIND led to significant improvements in parent self-efficacy[4] and executive function[3] among middle-income families. Regions of Interest (ROIs) previously identified include clusters in the left inferior frontal gyrus (IFG) and insula for the Correct Stop > Correct Go contrast of the Stop-Signal Task.

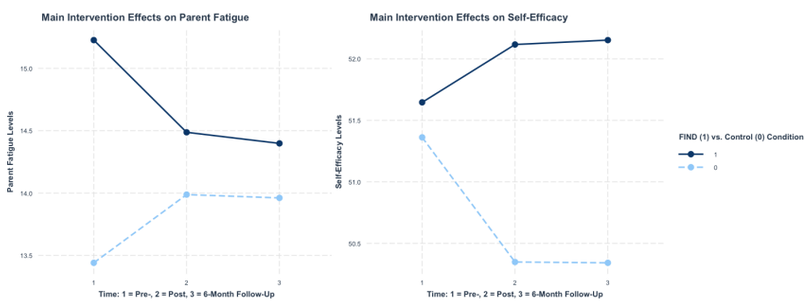
Participants included as Intent-to-Treat, but neuroimaging pre- and post-intervention was made optional due to COVID.



FIND improves self-reported parent outcomes (n = 114).

Consistent with previous pilot and RCT studies, FIND intervention:

- reduced parent fatigue post-intervention (time by group effect: B = -1.29, SE = .57, p = .024) and after 6 months (B = -1.35, SE = .60, p = .027)
- marginally increased caregiver self-efficacy post-intervention (time by group effect: B = 1.48, SE = .83, p = .076) and after 6 months (B = 1.53, SE = .89, p = .087)
- marginally decreased parenting stress after 6 months (B = -2.19, SE = 1.11, p = .051)



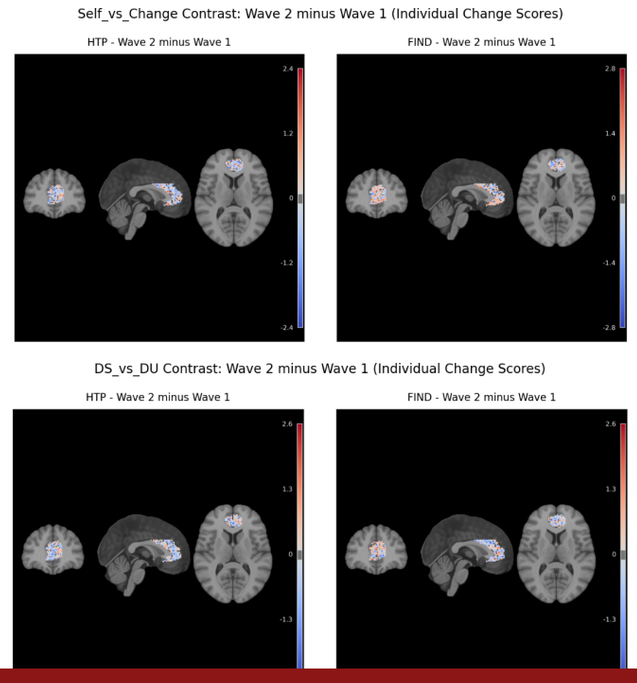
FIND intervention effects on parent fatigue (left) and self-efficacy (right); parenting stress not shown.

FIND had non-significant effects on Parent Self-Evaluation Task (n = 12), behaviorally and in ACC activation.

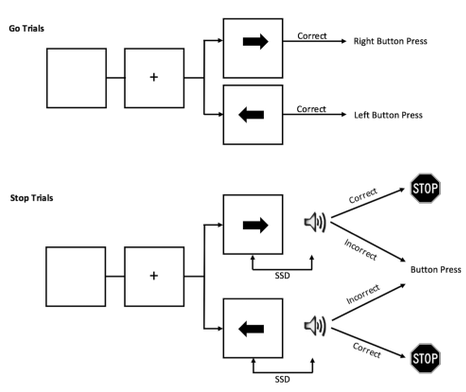
$$\text{Endorsement}_{\text{wave2}} = \beta_0 + \beta_1 \text{Endorsement}_{\text{wave1}} + \beta_2 \text{DS} + \beta_3 \text{Self} + \beta_4 \text{FIND} + \epsilon$$

Parameter	Mean	SD	HDI 3%	HDI 97%
Endorsement at time 1	0.971	0.117	0.762	1.195
Developmentally Supportive	-0.119	5.598	-10.848	10.277
Statement about Self	1.965	5.387	-7.721	12.446
FIND condition	-8.024	4.305	-16.355	-0.265

Only proportion of statements endorsed at time 1 significantly predicted proportion of statements endorsed at time 2. Adding two and three-way interactions did not improve model fit. No significant differences were observed in activation of the anterior cingulate cortex (ACC) in all analyses.



FIND participants had marginally improved inhibitory control as measured on the Stop Signal Task (n = 17).

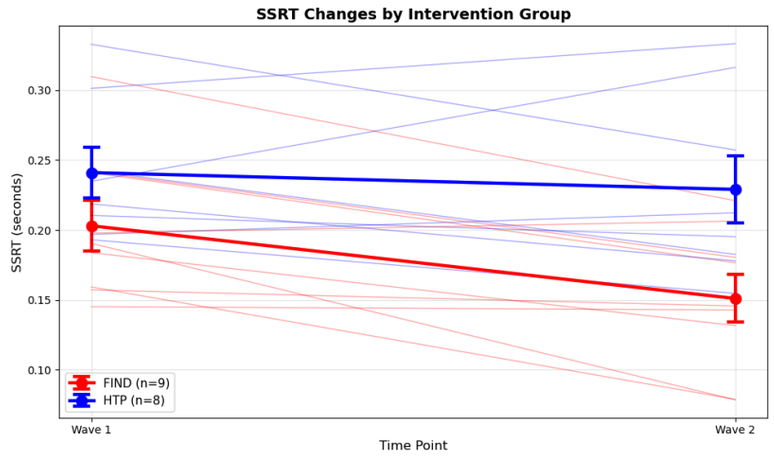


Source: Gaillard et al. (2020)

$$\text{SSRT}_{\text{wave2}} = \beta_0 + \beta_1 \text{SSRT}_{\text{wave1}} + \beta_2 \text{FIND} + \epsilon$$

Parameter	Mean	SD	HDI 3%	HDI 97%
SSRT at time 1	0.720	0.254	0.242	1.190
FIND condition	-0.050	0.026	-0.097	0.001

Stop signal response time (SSRT) at time 2 was mainly predicted by SSRT at time 1 rather than intervention condition. Adding a two-way interaction did not improve model fit. We will be analyzing the neuroimaging data soon.



References

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Thank you to all the families that made this research possible!

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