Title

A Primary Care Group Intervention to Promote Child and Caregiver Resilience: A Pilot
Study of the Redesigned Resilience Clinic (Preprint)

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Abstract

This pilot study of the redesigned Resilience Clinic (a group-based, psychoeducational intervention designed to promote relational health and child/family resilience) provides preliminary evidence that participation in this resilience intervention is associated with decreased caregiver stress and anxiety and child behavior concerns.

Introduction

Given the health/behavioral risks associated with adverse childhood experiences (ACEs) like child maltreatment, family violence, or parental substance abuse/mental illness,[1,2] more research is needed on preventative early childhood interventions prior to the onset of ACE-associated sequelae.[3] Based in primary care settings, the Resilience Clinic (RC)[4] is a caregiver group psychoeducational intervention designed to promote child/family resilience among children exposed to significant adversity. Following an initial launch serving children of all ages, this program underwent significant parent-informed redesign to focus on early childhood (ages 0-5), and now covers curricular materials from Circle of Security-Parenting[5] (building secure attachment) and Dovetail Learning[6] (mindful stress management) in 6 weekly, hour-long group sessions. This pilot study explored whether participation in RC was associated with decreases in measures of 1) caregiver stress, anxiety, and depression, and 2) child behavioral challenges.

Methods

This is a pilot study measuring pre-post differences in caregiver-reported measures of child and caregiver behavioral health following participation in the redesigned RC intervention. Study eligibility criteria included: child age 0-5 years and referral from the child's primary care provider based on positive ACE screening; siblings were excluded from the study. Eligible participants were allowed to join the intervention without joining the study.

Study measures included the Child Behavior Checklist (CBCL) for ages 1.5 to 5[7] to assess child behavioral challenges, along with the Generalized Anxiety Disorder (GAD)-7[8] for caregiver anxiety, Patient Health Questionnaire (PHQ)-8[9] for caregiver depression, and the Perceived Stress Scale (PSS)-4[10] for caregiver stress. Caregivers completed these measures at

study entry, then underwent the 6-week intervention, then completed these same measures again 3 months after intervention completion.

To estimate intervention effect sizes, we utilized Cohen's *d*, or standardized mean difference (SMD), for paired samples. Cohen's *d* value cutoffs of 0.2, 0.5, and 0.8 are generally considered as small, medium, and large effect sizes respectively. *P*-values were constructed from the Wilcoxon signed rank test since the variables were not normally distributed, with significance set at *P*<.05.

This study was approved by the host institution's Institutional Review Board (IRB) (# 22-37781) as minimal risk research.

Results

A total of n=28 caregiver/child dyads were recruited; of these, 79% preferred Spanish and 14% English. Median child age was 4.5 years; 50% were male. Only participants who completed both pre- and post-data collection were included in this analysis.

Three months after completing the intervention, caregivers reported large decreases in their anxiety and perceived stress compared to baseline, as detailed below:

Table 1: Pre-post intervention change in caregiver behavioral health measures

Construct	Measure	N	Baseline median (IQR)[a]	Post-intervention median (IQR)[a]	Cohen's *d* (SMD)	*P*-value
Caregiver anxiety	GAD-7 total score	16	5.5 (1.75, 9.25)	1.0 (0, 4.25)	0.86	.01
Caregiver depression	PHQ-8 total score	4	8.0 (6.5, 9.25)	5.5 (3.75, 7.25)	0.63	.42
Caregiver perceived stress	Perceived Stress Scale (PSS)- 4-item	18	7.0 (6, 8)	4.0 (3, 6)	0.92	.02

[a]IQR= Interquartile Range

Of note, the decrease in caregiver anxiety (GAD-7: *d*=0.86, *P*=.01) and in caregiver perceived stress (PSS-4: *d*=0.92, *P*=.02) suggest large and statistically significant intervention effect sizes for parental anxiety and perceived stress among RC participants. PHQ-8 responses were limited by the fact that the full instrument was only administered if the PHQ-2 score exceeded 4, making conclusions difficult to draw.

Similarly, moderate decreases were seen in post-intervention measures of multiple child behavior challenges, including attention problems, aggressive behaviors, externalizing problems, total problems, and stress problems. The decrease in attention problems (*d*= 0.72, *P*=.05) approached statistical significance. Selected child behavior domains showing moderate post-intervention decreases are listed in Table 2 below:

Table 2: Pre-post intervention change in the Child Behavior Checklist (CBCL) Ages 1.5-5, selected domains

Child Behavior Domain	N	Baseline median(IQR)[a]	Post-intervention median (IQR)[a]	Cohen's d (SMD)	P-value
Attention Problems	11	62 (57.5, 67)	53 (51.5, 62)	0.72	.05
Aggressive Behaviors	11	64 (51.5, 70)	56 (51, 61)	0.53	.20
Externalizing Problems	11	64 (53, 70)	56 (48.5, 60)	0.70	.11
Total Problems	11	68 (53.5, 72)	58 (49.5, 66.5)	0.50	.07
Stress Problems	11	70 (53, 72)	53 (52, 62.5)	0.74	.09
Depressive Problems	11	63 (53, 69.5)	56 (50, 61.5)	0.52	.09
ADHD Problems	11	64 (59, 71)	57 (52, 65.5)	0.72	.08

[a]IQR= Interquartile Range

All the other CBCL domains showed small effect sizes (d <0.5), including emotionally reactive (0.27), anxious depressed (0.12), somatic complaints (0.46), withdrawn (0.36), sleep problems (0.16), internalizing problems (0.32), anxiety problems (0.02), autism spectrum problems (0.48), and oppositional defiant problems (0.40).

Discussion

Three months after completing the Resilience Clinic (RC), caregivers reported large decreases in their anxiety and perceived stress, along with moderate decreases in their children's attention problems, aggressive behaviors, externalizing problems, total problems, and stress and depressive problems. Of these changes, the decreases in caregiver anxiety and caregiver perceived stress were statistically significant (P<.05), and the reduction in child attention problems approached statistical significance (P=.05). These findings provide preliminary evidence that participation in this group resilience intervention may help improve caregiver stress/anxiety and child behavior.

Study limitations include the small sample size and lack of a control group, making findings preliminary in nature. Given this promising early signal, this study should be followed by a randomized controlled trial to evaluate intervention effects more definitively.

Of note, given the young age of these children when mental health diagnoses are rare, most would not otherwise be receiving mental health services. The preventative nature of this intervention and location in primary care make this pilot an important proof of concept that primary care-based, preventative, group interventions like this one may, at least in the short term,

meaningfully improve caregiver and child behavioral health in the context of early childhood adversity.

Conflicts of Interest
None declared

Abbreviations
ACE: adverse childhood experiences
CBCL: Child Behavior Checklist
GAD-7: Generalized Anxiety Disorder -7 item (screening tool for anxiety)
IQR: interquartile range
IRB: Institutional Review Board
PHQ-8: Patient Health Questionnaire (PHQ)-8 item (screening tool for depression)
PSS: Perceived Stress Scale
RC: Resilience Clinic
RCT: randomized controlled trial

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