**The Resilient Youth Program: A Promising Online Program for Resiliency and Stress Management (Extended Report)**

**Introduction**

Challenges associated with the COVID-19 pandemic have increased youth exposure to stressors associated with risk for depression and anxiety (Rosen et al., 2021; Wang et al., 2022). Increases in mental health difficulties among youth were evident prior to the COVID-19 pandemic and research suggests these trends have continued well into the pandemic (Doom et al., 2023). However, not all youth experienced increases in mental health difficulties equally. Research with youth suggests that girls, younger children, and youth with previous psychological and health difficulties were more likely to report increases in mental health symptoms during the pandemic (Kauhanen et al., 2023; Singh et al., 2020). Moreover, a variety of contextual factors have been found to be associated with mental health difficulties during the pandemic, including decreased opportunities for physical activity, disruptions to youths’ daily routines and structure, difficulties with remote learning, increased family conflict (Magson et al., 2021; Marques de Miranda et al., 2020; Singh et al., 2020). Given the challenges to youth’s well-being as well as the barriers to in-person care introduced by the pandemic, there has been a growing interest in the development and delivery of remote resilience-building interventions to decrease risk for mental health difficulties and promote mental well-being among youth (Doom et al., 2023).

Resilience theory and research focuses on the various malleable systems that influence the ability of young individuals to navigate and cope with challenges and hardships that pose threats to their development (Masten, 2013). Various studies have investigated the efficacy of resilience-building prevention programs in the context of the COVID-19 public health crisis. In a randomized trial of self-guided, online, single-session interventions focused on growth mindset for adolescents ages 13–16 in the U.S., Schleider et al. (2022) found that the intervention (compared to the control) was associated with lower depressive symptoms. In a quasi-experimental study of remote mindfulness training for middle-schoolers in China, Yuan (2021) found that the training (compared to the control) was associated with higher levels of emotional intelligence. In a separate experimental study of a six-session online psychoeducational program for 4th and 5th graders in Cyprus, Özdemir and Bengisoy (2022) found that children in the experimental condition (compared to the control) reported higher levels of problem-solving and emotional resilience skills. Most recently, Xing et al. (2023) tested a 4-week resilience intervention focused on increasing psychological tenacity, strength, and optimism among 7th, 8th, 10th and 11th graders in Wuhan, China and found that it was associated with increased resilience only among 7th and 8th graders. As a whole, these studies highlight the potential advantages of resilience-promoting interventions during public health crises like the COVID-19 pandemic.

Unfortunately, there continues to be little research on low-cost and scalable resilience-building interventions that can be delivered directly to children and adolescents and that directly target stress management, a key mechanism that may explain the document increase in depression and anxiety risk among youth during the pandemic (Wang et al., 2022). To our knowledge, there is no published data on stress management resilience interventions for youth implemented during the COVID-19 pandemic. This is unfortunate given that the stress regulation system is a key aspect of youth resilience (Masten et al., 2021). In the context of the COVID-19 pandemic, researchers have found that youth who reported higher levels of factors associated with *stress management*, such as problem-focused coping, cognitive reappraisal, and social connection were less likely to report depressive and anxiety symptoms in the face of COVID-19 related stressors (Doom et al., 2023). The key role of stress management during the COVID-19 pandemic is further substantiated by research suggesting that dysfunction in the hypothalamic-pituitary-adrenal (HPA) axis represents a key mechanism implicated in the increase in mental health problems among youth during the COVID-19 pandemic.

In sum, the COVID-19 pandemic has increased stress and mental health challenges in youth, particularly for girls, younger children, and those with previous mental and physical health difficulties, prompting the need for remote resilience-building interventions. Unfortunately, despite evidence suggesting that stress management is a key process implicated in youth mental health problems during the pandemic, there is a sore lack of research on low-cost, scalable resilience programs targeting stress management that can be delivered directly to youth in the community. Thus,the purpose of this study was to examine the preliminary efficacy of the *Resilient Youth* *Program* (RYP) among a sample of youth ages 6-18 via a naturalistic pilot study. The primary hypothesis was that participants would report lower levels of mental symptoms and stress, as well as higher levels of well-being indicators at post-intervention compared to pre-intervention.

**Method**

The RYP is a non-commercial six-session program adapted from the Stress Management and Resiliency Training/Relaxation Response Resiliency Program (SMART-3RP), which is informed by mind-body research, cognitive-behavioral therapy, and positive psychology, and conceptualizes resilience as a malleable process that can be promoted via skills that elicit the body’s relaxation response (to counteract the stress response), facilitate stress management (to reduce psychological symptoms), and enhance growth (promote positive affect and connectedness). The RYP is newly developed and thus has not been previously researched. See Park et al. (2021) for more information about the theoretical and treatment model that informed the RYP.

The RYP consists of elementary-, middle-, and high-school student online groups (≤ 12 youth/group, 45 minutes/week). Youth were provided psychoeducation on the stress/relaxation responses and taught evidence-based skills, including breathing techniques, mindfulness, progressive muscle relaxation, problem solving, cognitive restructuring, and self-coaching. The RYP was delivered remotelyfrom a U.S. academic medical center to youth via a secure teleconferencing platform. Group facilitators were mental health trainees, psychologists and educators who completed implementation training and mentoring with the RYP developers.

Participants were recruited from the authors’ academic medical center through emails to employees and pediatricians, with a focus on children of first responders. Data were collected through quality assurance procedures and thus ethical approval was not obtained. Consent to participate was obtained prior to participation. Methods for data collection were reviewed and agreed upon by the leaders of the Child Resiliency Program at the authors’ academic medical center, who ensured that they conformed to the Declaration of Helsinki.

Parents/youth completed pre-intervention and post-intervention questionnaires (within a week of RYP completion) through a secure web platform for survey/data management. Youth completed a series of Patient-Reported Outcomes Measurement Information System (PROMIS®) pediatric short forms (Forrest, Devine, et al., 2018; Forrest, Ravens-Sieberer, et al., 2018; Quinn et al., 2014): *Anxiety* (v2.0, 8a), *Depressive symptoms* (v2.0, 8a), *Anger* (v.2.0, 9a), *Physical stress* (v1.0, 8a), *Psychological stress* (v1.0, 8a), *Positive affect* (v1.0, 8a), and *Life satisfaction* (v1.0, 4a). Parents were administered the Parent Proxy versions (Forrest, Devine, et al., 2018; Forrest, Ravens-Sieberer, et al., 2018; Irwin et al., 2012). Child-/parent-reported skills use data were also collected. Additionally, at pre-intervention, parents completed the *Epidemic-Pandemic Impacts Inventory (EPII*; Grasso et al., 2020), a 92-item inventory of COVID-19 pandemic-related experiences, including adverse (across the following life domains: work life, home life, social activities/isolation, emotional and physical health, infection history) as well as positive ones. Participants were asked whether each experience impact them and/or someone else in the home (“Yes, Me”, “Yes, Person in Home”, “No”, and “Not Applicable). For the present study, we dichotomized responses by collapsing both “yes” responses as well as the “no” and “not applicable” responses (Grasso et al., 2021).

Two hundred fifteen youth ages 6-18 (*M* = 11.70, SD = 3.03) enrolled between May 2020 and March 2021, of which 79% (*n* = 170) attended at least one RYP session. Approximately 84% of youth (*n* = 143) and 78% of their parents (*n* = 133) completed the pre-intervention questionnaire, out of which approximately 46% of youth (ages 6-18, *Mage* = 11.65, SD = 3.02) and 50% of their parents (both *n*  = 66) completed post-intervention questionnaires. Three parents (4.5%) did not report their child’s gender. Of those who did, most identified their child’s gender as “female” (54.5%), followed by “male” (40.9%) and trans/gender diverse (1.2%). Thirty-one parents (47%) did not report their child’s race/ethnicity. Of those who did, most identified their child as “non-Hispanic and White” (42.4%), followed by “Asian American,” “African American,” and “Hispanic and multiracial” (each 3%).

Data were screened for extreme outliers, normality, and linearity. No extreme outliers were identified. With the exception of physical stress scores, data were approximately normally distributed. Wilcoxon signed-rank tests were conducted to examine agreement between parent- and child-reported outcomes at pre-/post-intervention. To test the primary hypothesis, Wilcoxon signed-rank tests were conducted to examine differences in parent-/child-reported outcomes from pre- to post-intervention. Cohen’s *d* was calculated to examine effect sizes. Post-hoc exploratory analyses included regression analyses to examine associations between adverse and positive pandemic-related experiences and change in outcomes, as well as to examine associations between child age/gender and change in outcomes. Change variables were created by subtracting post-intervention T scores from pre-intervention T scores for each outcome measure for each participant and dummy codes were created to represent gender categories.

**Results**

Parents and their children tended to agree in their reports of most outcomes, with a few exceptions. At pre-intervention, parents reported higher levels of anger (*z* = -2.48, *p* = .01) and psychological stress (*z* = -3.66, *p* < .001), as well as lower positive affect (*z* = -4.50, *p* < .001) and life satisfaction (*z* = -2.42, *p* = .02) than their children. At post-intervention, parents reported higher levels of anger (*z* = -5.30, *p* < .001) and physical stress (*z* = -3.11, *p* = .002) than their children. There were significant differences in all parent-reported outcomes and in most of the child-reported outcomes from pre- to post-intervention (Table 1), all of which fall within the recommended range of minimally important differences (MIDs) for pediatric PROMIS pediatric measures (Thissen et al., 2016). At post-intervention, most (77% of youth; 73% of parents) reported (their child) using skills taught in the program.

Results from post-hoc regression analyses indicated that neither age nor gender were significantly associated with change in outcome scores (all *p*’s > .05). In contrast, regression analyses indicated that parent-reported positive experiences related to the COVID-19 explained approximately 25% of the variance in change in child-reported depression scores (F(1,53) = 17.47, *p* <.001, *R*2 = .25). There were no significant associations between all other pandemic-related experiences and change in outcomes (all *p*’s > .05).

**Discussion**

Given that the COVID-19 pandemic has increased exposure to stressors associated with risk for depression and anxiety among youth (Rosen et al., 2021; Wang et al., 2022), there is an urgent need for remote, low-cost and scalable resilience-building interventions for children and adolescents (Doom et al., 2023) that support youth’s abilities in regulating their body’s stress response (Wang et al., 2022). To our knowledge, the Resilience Youth Program (RYP) represents among the first low-cost, scalable resilience programs targeting stress management that can be delivered directly to youth in the community. This preliminary naturalistic pilot study suggests that the RYP may help reduce some psychological and stress symptoms as well as increase well-being among youth. This is in line with recent investigations suggesting that prevention programs aimed at increasing resilience among youth during the COVID-19 pandemic may be helpful in promoting well-being (Doom et al., 2023). At the same time, conclusions about this study are limited by a lack of a priori sample size, data analysis based on quality assurance procedures, incomplete data around sociodemographic information and session attendance, as well as potential response bias due to participants who did not complete all questionnaires. Randomized controlled trials are needed to establish the efficacy and acceptability of the RYP. Future research is needed to examine the extent to which outcomes vary by age group, gender, COVID-19 pandemic-related positive and negative experiences, sessions attended (i.e., treatment dosage) and from assessing a wider range of resilience factors (e.g., at the relational and communal levels). Given the discordance between parent- and youth-reported outcomes, researchers/practitioners may consider using multiple measures for each outcome and collecting data on observable indicators of well-being. Future directions also include cultural and linguistic attunement of the RYP to meet the needs of youth populations who experience threats to their well-being, including racially/ethnically marginalized youth, lesbian, gay, bisexual, transgender, queer/questioning, two-spirit and more (LGBTQQ2+) youth, youth with intellectual, developmental, and special health care needs, and children with adverse childhood experiences.

**Table 1**

*Differences in Pre- and Post-intervention Parent- and Child-reported Outcomes*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Pre-intervention | Post-intervention | Wilcoxon Signed Rank Test |  |
| PROMIS Measure | *n* | MeanT | *SD* | MeanT | *SD* | *Z* | *p* | Cohen’s *d* |
| *Parent-reported* |
| Anxiety  | 65 | 59.37 | 8.78 | 53.35 | 8.63 | -4.95 | <.001 | .69 |
| Depression | 63 | 59.17 | 8.98 | 52.71 | 9.17 | -5.05 | <.001 | .71 |
| Anger  | 65 | 63.18 | 12.26 | 56.08 | 11.51 | -3.02 | .002 | .60 |
| Physical Stress  | 63 | 54.28 | 10.16 | 51.35 | 9.16 | -2.20 | .03 | .30 |
| Psychological Stress  | 62 | 61.81 | 8.27 | 55.21 | 9.25 | -5.09 | <.001 | .53 |
| Positive Affect  | 61 | 37.34 | 8.12 | 42.36 | 9.40 | 4.54 | <.001 | .57 |
| Life Satisfaction  | 61 | 38.22 | 7.46 | 42.12 | 8.81 | -3.54 | <.001 | .48 |
| *Child-reported* |
| Anxiety  | 65 | 57.20 | 8.31 | 53.81 | 8.88 | -2.89 | .004 | .39 |
| Depression | 62 | 56.78 | 10.38 | 52.49 | 8.78 | -3.38 | <.001 | .45 |
| Anger  | 61 | 52.54 | 11.65 | 48.73 | 9.16 | -3.13 | .002 | .36 |
| Physical Stress  | 62 | 56.37 | 8.57 | 53.90 | 9.99 | -2.16 | .03 | .27 |
| Psychological Stress  | 62 | 57.51 | 9.42 | 54.81 | 8.83 | -1.90 | .06 | - |
| Positive Affect  | 62 | 42.41 | 7.05 | 44.37 | 8.70 | -1.71 | .09 | - |
| Life Satisfaction  | 62 | 42.25 | 9.51 | 45.14 | 9.91 | -2.26 | .02 | .30 |

**Table 2**

*Resilient Youth Program Session Structure*

|  |  |
| --- | --- |
| **Session**  | **Session Outline** |
| 1. The Stress Response
 | * + Defining stress
	+ Identifying the negative effects of chronic stress
	+ Identifying everyday stressors
	+ Recognizing the fight-flight-freeze response
 |
| 1. The Relaxation Response
 | * Defining the relaxation response
* Recognizing the positive impact of the relaxation response
	+ Practicing diaphragmatic/belly breathing
 |
| 1. Ways to Relax
 | * Defining and practicing mindfulness, problem solving, distress tolerance, and acceptance skills
* Practicing imagery-based meditation (special place mediation)
* Practicing mindful sensory awareness
 |
| 1. Noticing Stressful Thoughts
 | * Learning about how thoughts influence feelings and behaviors
* Recognizing unhelpful thoughts
* Learning about and practice identifying thinking traps and unhelpful self-talk
* Practice helpful self-talk/self-coaching
 |
| 1. Changing Unhelpful Thoughts to Helpful Thoughts
 | * Learning about the benefits of changing unhelpful thoughts and distancing from them
* Practicing detective thinking, testing out the thought and creating a more helpful thought
* Practice adopting a neutral stance towards thoughts
 |
| 1. Putting all Together
 | * Creating a personalized toolbox of skills
 |

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