

Telehealth Delivery of the RELAX Intervention for Families of Adolescents Diagnosed with ADHD: Preliminary Treatment Outcomes and Evidence of Acceptability and Feasibility

Rosanna Breaux¹, Delshad M. Shroff¹, Annah R. Cash¹, Courtney S. Swanson¹, Corinne Carlton¹, Jennifer R. Bertollo¹, & Angela V. Dahiya¹

¹ Virginia Polytechnic Institute and State University

Correspondence concerning this article should be addressed to Rosanna Breaux, Virginia Polytechnic Institute and State University, Child Study Center, 460 Turner Street NW, Collegiate Square Suite 207, Blacksburg, VA 24060-0293. Email: rbreaux@vt.edu

Acknowledgements. We would like to thank Katie Behrhorst, Natalie Buchen, Caroline Cusick, Elizabeth DeLucia, Katelyn Garcia, Cathrin Green, Kelly O'Connor, Kelcie Willis, and Sandra Yankah for their help with running the RELAX intervention and focus groups. We would also like to thank the community clinicians who provided feedback to help improve the RELAX intervention, and the families who kindly agreed to participate in this pilot study. Finally, we would like to extend our sincerest gratitude to the Clark-Hill Institute for Positive Youth Development at Virginia Commonwealth University for their financial support for the in-person pilot study and the Virginia Tech, Department of Psychology for their financial support for the telehealth pilot study.

Declaration of Interest. The authors of this study, nor any members of their immediate family, have any conflicts of interest to disclose.

Keywords: attention-deficit/hyperactivity disorder; telehealth; emotion regulation; family conflict; adolescence; intervention research; emotion socialization

**This article may not exactly replicate the final version published in the journal.
It is not the copy of record.**

Breaux, R., Shroff, D. M., Cash, A. R., Swanson, C. S., Carlton, C., Bertollo, J. R., & Dahiya, A. V. (2021). Telehealth delivery of the RELAX intervention for families of adolescents diagnosed with ADHD: Preliminary treatment outcomes and evidence of acceptability and feasibility. *Evidence-Based Practice in Child & Adolescent Mental Health*. Advanced Online Publication. doi: 10.1080/23794925.2021.1970053

Abstract

Regulating Emotions Like An eXpert (RELAX) is a group-based intervention that targets emotion dysregulation (ED) and interpersonal conflict among adolescents diagnosed with attention-deficit/hyperactivity disorder (ADHD). This study is a preliminary evaluation of the feasibility, acceptability, and efficacy of RELAX across in-person and telehealth groups, examining differences in treatment outcomes and feedback based on format. Participants included 32 families (18 in-person, 14 telehealth) with adolescents diagnosed with ADHD, ages 11-16. Caregiver-, clinician- and adolescent-report of adolescent ED, adolescent communication, and caregiver-adolescent/family conflict, as well as caregiver self-report of ED and emotion socialization were collected pre- and post-RELAX; caregivers and adolescents completed a feedback survey post-RELAX. Attendance was higher for telehealth (95% vs. 87%), but homework completion was higher for in-person (85% vs. 70%). Caregiver and adolescent feedback indicated very high rates of satisfaction with RELAX, with no significant differences in caregiver satisfaction and minimal differences in adolescent satisfaction between the in-person and telehealth groups. Large improvements were found for caregiver and clinician ratings of adolescent ED ($\eta^2=.18-.48$) and family conflict ($\eta^2=.26$ and $.43$), moderate decreases in non-supportive emotion socialization were found ($\eta^2=.11$), and small improvements were found for caregiver ED ($\eta^2=.03$). Treatment outcomes were similar for in-person and telehealth groups, with some evidence for larger improvement of adolescent ED for telehealth, whereas larger improvement in family conflict emerged for in-person. RELAX was successfully adapted to be administered via telehealth with similar feasibility, acceptability, and efficacy to the in-person intervention. Efforts to continue disseminating and evaluating ED-focused interventions are warranted and imperative.

Telehealth Delivery of the RELAX Intervention for Families of Adolescents Diagnosed with ADHD: Preliminary Treatment Outcomes and Evidence of Acceptability and Feasibility

There is growing recognition that adolescents with attention-deficit/hyperactivity disorder (ADHD) experience significant emotion dysregulation (ED; see Graziano & Garcia, 2016; Shaw et al., 2014, for reviews). ED is defined as a limited ability to initiate and regulate one's emotional and behavioral reaction in a manner consistent with the situation (Eisenberg & Spinrad, 2004). Notably, ED is associated with many negative social and academic outcomes for youth diagnosed with ADHD (see Bunford et al., 2015 for review), including being linked to mental health and academic outcomes among youth diagnosed with ADHD during the COVID-19 pandemic (e.g., Breaux et al., 2021b; McFayden et al., 2021). Additionally, the adolescent developmental period is characterized by high levels of interpersonal conflict (Laursen & Collins, 1994), with particularly high rates among families of adolescents diagnosed with ADHD (Barkley et al., 1992). As such, the Regulating Emotions Like An eXpert (RELAX) Intervention (Breaux & Langberg, 2020) was developed to target ED and interpersonal conflict among families of adolescents diagnosed with ADHD. RELAX was developed and originally validated as an in-person intervention; however, due to the importance of ED and the ongoing COVID-19 pandemic's social distancing measures, RELAX was delivered via telehealth during the 2020-2021 school year. As such, the present study conducted a preliminary evaluation of the feasibility, acceptability, and efficacy of RELAX across in-person and telehealth groups. Further, the current investigation examined potential differences in treatment outcomes and family feedback based on delivery format.

The Importance of Emotion Socialization for Adolescent Emotion Regulation Abilities

Youth's emotion regulation is guided by emotion-focused parenting practices (referred to

as emotion socialization), which begins in early childhood and continues throughout adolescence (Cole et al., 2009; Brand & Klimes-Dougan, 2010). In particular, parents' emotional reactions and regulatory strategies may serve a fundamental role in teaching adolescents effective emotion regulation skills (Brand & Klimes-Dougan, 2010; Morris et al., 2007). One way in which parents influence emotion regulation development is by directly engaging in displays of emotional expression, which affect the overall emotional tone of the home and family context (Denham et al., 1997; McCarty & Weisz, 2002). Further, when parents respond to their adolescent's display of emotion with supportive responses such as empathy, validation, comfort, and support of problem-solving, adolescents learn to manage their negative emotions in a more regulated and constructive manner, relative to when parents use non-supportive responses that discourage, dismiss, punish, or magnify the expression of emotion. Such non-supportive responses can lead to adolescents developing inflexible, inconsistent, or unpredictable ways of experiencing emotion, as well as poor emotion regulation abilities (Brand & Klimes-Dougan, 2010).

Parent emotion socialization practices, including modeling use of their own emotion regulation strategies, are significant predictors of adolescent emotion regulation (Fabes et al., 2001; Johnston & Chronis-Tuscano, 2015; Sanders et al., 2015), with these relations being particularly robust for adolescents with high levels of ADHD symptoms (Breux et al., 2018; Oddo et al., 2020). Specifically, Breux et al. (2018) found that supportive emotion socialization practices were longitudinally associated with less ED as indicated by skin conductance level, and non-supportive emotion socialization practices were predictive of greater parent- and teacher-rated emotional lability for pre-adolescents with high ADHD symptoms, but not for youth without ADHD symptoms. Additionally, Oddo et al. (2020) found that non-supportive emotion socialization practices partially mediated the associations between maternal ED and adolescent

emotion lability, with a stronger effect at higher levels of youth ADHD symptom severity. Despite there being limited research to date, these studies provide a strong foundation for the critical role of parent emotion socialization behaviors in preventing ED among adolescents, particularly those with ADHD, and suggest that parent emotion socialization is an important intervention target to improve the ED experienced among this at-risk clinical population.

Family Conflict during Adolescence

The adolescent developmental period is characterized by increased rates of interpersonal conflict with peers and family members (Laursen & Collins, 1994), with parent-adolescent conflicts primarily surrounding everyday matters, such as homework, self-care, chores, and social life (Barber, 1994; Laursen & Collins, 1994). Adolescence is also a time of increased autonomy-seeking behavior, which may be at odds with their desired connectedness within the family, and the structure imposed on them by adults thus far (Spear & Kulbok, 2004). During this developmental period, adolescents and parents undergo reorganization of their relationship and respective responsibilities, often requiring significant negotiation (Branje, 2018). As a result, parents impose rules, curfews, and limitations that can often be seen as unreasonable and punitive. Additionally, adolescence is a period when friendships become increasingly important, peers become increasingly evaluative, and new relationships, including romantic relationships, begin to develop. Navigating these new interpersonal experiences can be stressful for adolescents due to anxiety around new relationships and anticipated or actual rejection. To this end, adolescents often perceive their parents' attempts to control their friendships and social behaviors as instigating family conflict (Smetana, 1989).

Importantly, high rates of adolescent interpersonal conflict are further exacerbated for adolescents diagnosed with ADHD, putting these individuals at risk for particularly poor

interpersonal outcomes (Barkley et al., 1992). This is alarming given the well-documented relations between parent-adolescent conflict and a number of adolescent well-being metrics, such as life satisfaction, hopelessness, and self-esteem (Shek, 1998). Therefore, understanding the utility of interventions that may improve family conflict, particularly for adolescents diagnosed with ADHD, is crucial. Notably, there is a direct interplay between emotion regulation and an individual's ability to effectively navigate conflicts (Lopes et al., 2011), suggesting that interventions seeking to improve emotion regulation skills may also lead to reductions in interpersonal conflict. For example, some research found that parent-adolescent pairs that utilize greater variability of emotions during conflictual interactions tend to adapt to this transition period more effectively, suggesting that healthy and explicit expression of a range of emotions during conflict interactions may be one viable treatment target (Branje, 1989). Additionally, negative parenting responses are one particularly strong predictor of adolescent-parent conflict and may serve as a promising intervention target (Barber, 1994).

Evidence for the Efficacy of Telehealth Interventions

Prior to COVID-19, telehealth research indicates comparable efficacy rates to that of in-person treatment (see Ros-DeMarize et al., 2021 for a review). Although telemedicine has the potential to expand access to evidence-based services, the use of telehealth services for youth diagnosed with ADHD was fairly uncommon prior to the COVID-19 pandemic, with only a handful of intervention studies having been conducted (see Spencer et al., 2020 for review). Two intervention telehealth studies of note include a study by Myers et al. (2015) and a study by Sibley et al. (2017). Myers and colleagues (2015) conducted a community-based randomized-controlled trial to study the effectiveness of a telehealth service delivery model for children diagnosed with ADHD, known as the Children's ADHD Telemental Health Treatment

Study, compared to a primary care service model. Results included significant improvements in symptoms of ADHD in children randomized to telehealth as compared to those in the primary care condition, suggesting that the utilization of telehealth intervention to treat ADHD symptoms was efficacious. Sibley et al. (2017) is the only study to date that has explored the use of telehealth for adolescents diagnosed with ADHD specifically. They utilized videoconferencing to address academic and family impairment such as organization, time management, and planning problems, and motivation deficits among adolescents diagnosed with ADHD and their parents. Results revealed high family satisfaction, despite minor disturbances in intervention delivery via video conferencing. Following treatment, a significant decrease in ADHD symptoms and difficulties with organization, time management, and planning were reported (Sibley et al., 2017).

Due to the stay-at-home orders and social distancing policies during the COVID-19 pandemic, telehealth treatments, including those for individuals diagnosed with ADHD, have become increasingly prevalent, as almost all clinical services were forced to transition quickly to telehealth delivery methods (Breux et al., 2021a). Several manuscripts have discussed experiences with transitioning to telehealth for providing evidence-based assessment, diagnosis, and/or psychosocial and psychiatric interventions for individuals diagnosed with ADHD during the COVID-19 pandemic (McGrath, 2020; Oddo et al., 2020; Sharma et al., 2020). One study specifically discussed the implications of telehealth delivery of an intervention for college students diagnosed with ADHD (Oddo et al., 2020) by adapting and tailoring the Students Understanding College Choices: Encouraging & Executing Decisions for Success program (SUCCEEDS; Meinzer et al., 2020). However, this study did not assess treatment outcomes for the telehealth SUCCEEDS program relative to its traditional in-person program. Although

prior research findings suggest comparable efficacy of telehealth and in-person interventions for clinical samples broadly, research evaluating the feasibility, acceptability, and efficacy of telehealth interventions, especially social-emotional interventions, for adolescents diagnosed with ADHD is scarce.

The RELAX Intervention

RELAX is a group-based, social-emotional intervention that targets ED and interpersonal conflict, by equipping adolescents with coping, communication, and conflict management skills, and teaching caregivers the importance of emotion socialization and these same skills the week before their adolescents. This unique structure is important to facilitate caregiver reflection and utilization of skills in their own life, to help caregivers model these skills for adolescents, and to facilitate caregiver support of their adolescents' skill use in the following weeks. This is critical given the high rates of caregiver psychopathology, stress, and ED found among caregivers of youth diagnosed with ADHD (e.g., Mazursky-Horowitz et al., 2015; Theule et al., 2013).

RELAX includes eight weekly 90-minute groups, with the first 60 minutes involving separate caregiver and adolescent sessions and the last 30 minutes involving a combined problem-solving/discussion activity among caregiver-adolescent dyads. Each caregiver and adolescent session consists of review/discussion of homework activity, didactics, interactive activities (e.g., watching of relevant video clips, reflection exercises), and discussion. For the in-person RELAX intervention, clinicians walk around and monitor the room during the combined session to ensure that adaptive discussions were taking place, which would ideally result in a clear plan for that week's skill review activity during the combined portion. Additional information about RELAX session content can be found in Breaux and Langberg (2020).

The telehealth RELAX intervention followed the same eight-week, 90-minute, structure

as the in-person groups in terms of content, but was delivered via the use of two separate HIPAA compliant Zoom links – one for the adolescent session and one for the caregiver session.

Caregivers then joined the adolescent link for the combined sessions during the last 30 minutes of each group. In the separate caregiver and adolescent groups, the breakout room feature was used in order to provide more opportunities for each caregiver to discuss and problem solve issues, as well as to encourage equal participation across adolescents while discussing session content. Further, these breakout rooms were created to pair each adolescent-caregiver dyad with a clinician who would ensure discussion compliance, help facilitate problem-solving discussions, and create a tangible plan for the coming week that were specific to each family's unique needs.

The Present Study

Due to the implementation of social distancing measures resulting from the COVID-19 pandemic, RELAX was modified to be delivered via a telehealth format. However, this format has yet to be examined in terms of feasibility, acceptability, and efficacy. Accordingly, the goal of the present study was to assess the feasibility, acceptability, and efficacy of the telehealth RELAX intervention as compared to the in-person RELAX intervention. In order to assess efficacy, we collected global ratings of adolescent and caregiver ED, parent emotion socialization, and caregiver-adolescent conflict before and after treatment; caregiver and clinician weekly ratings of adolescent ED, adolescent communication, and family conflict were also collected over the course of treatment. In order to assess the feasibility and acceptability of the telehealth RELAX intervention, we sought caregiver and adolescent feedback regarding the intervention. We predicted that the group-based format of the RELAX intervention would be more preferred in-person rather than via telehealth. However, we also predicted that feasibility (i.e., attendance, homework completion) would be higher in the telehealth groups as compared to

in-person groups. We expected to see similar rates of acceptability across both formats. Finally, based on prior research suggesting comparable efficacy rates for telehealth and in-person treatment (see Ros-DeMarize et al., 2021), it was predicted that both groups would lead to improvements in adolescent and caregiver ED, adaptive caregiver emotion socialization, adolescent communication, and caregiver-adolescent/family conflict.

Materials and Methods

Participants

Participants in this study included 32 families (18 in-person, 14 telehealth) of adolescents diagnosed with ADHD. Adolescents (22 male, 10 female) were ages 11-16 years old ($M = 13.16$, $SD = 1.44$) at the start of the intervention. With regard to race and ethnicity, 68.8% identified as White, 21.9% identified as Black, 6.3% as Biracial/Multiracial, and 3.1% as another race. With regard to ethnicity, 9.4% identified as Hispanic/Latinx. The majority of adolescents (64.5%) had an Individualized Education Program or 504 plan. Within the total sample, 68.8% of youth were on medication for ADHD or emotional and behavioral disorders (e.g., anxiety, depression), and 53.1% had attended individual therapy at some point in their lives. Notably, 25.0% changed or started medication or individual therapy during RELAX; these changes were included as a covariate in all analyses. Caregivers included 25 mothers, six fathers and one grandmother, who were 33-61 years of age ($M = 46.00$, $SD = 5.92$). At the time of study entry, the mean family income was \$90,125 ($SD = \$49,523$). The majority (59.4%) of the caregivers had a bachelor's degree or higher, 15.6% had an associate's degree or had completed some college, and 25.0% were high school graduates. For more information on demographics for the in-person and telehealth subsamples, see Table 1.

Procedures

To be included in either the in-person or telehealth pilot study, participants had to have a diagnosis of ADHD, which was confirmed via a semi-structured diagnostic interview and a combination of caregiver- and teacher-report on the Vanderbilt ADHD Rating Scale (Wolraich et al., 2003). To promote generalizability, participants were allowed to have a comorbid diagnosis of oppositional defiant disorder, autism spectrum disorder, an anxiety disorder, or a depressive disorder. Exclusion criteria included having a bipolar, eating, obsessive-compulsive, or substance use disorder, or having an estimated IQ below 70. Study procedures were approved by the Virginia Commonwealth University and Virginia Tech Institutional Review Boards, for the in-person and telehealth studies, respectively, and were conducted in accordance with ethical standards as detailed in the 1964 Declaration of Helsinki and its later amendments. All caregivers provided consent and all adolescents provided assent to participate.

In-Person RELAX Pilot Intervention Procedures

Adolescent participants and their families were recruited between December 2018 and February 2019 via distribution of flyers, emails to ADHD research participant databases, and community clinic waitlists. In order to obtain a sample of adolescents diagnosed with ADHD experiencing high levels of ED, recruitment flyers included: “Do you have an adolescent with ADHD and poor emotion regulation?” and “Are you interested in helping your child be better able to self-regulate?” and a description of the study as “...an intervention study focused on teaching adolescents emotion regulation and conflict management skills and how caregivers can support their adolescents in using these skills.” Of the 28 screened families, 24 met criteria for the study via a phone screen, with 18 families being available to participate in groups at the days and times they were offered during Spring 2019. Participants were assigned to one of two groups based on preference for day/time and such that number, gender, and age distribution were equal

across the two groups (i.e., groups both had three girls, and both ranged in age from 11-16).

Baseline visits took place on the Virginia Commonwealth University campus. These visits were approximately 2 hours long and consisted of administration of the Children's Interview for Psychiatric Syndromes diagnostic interview (Weller et al., 2000); caregiver and adolescent completion of social, emotional, and behavioral measures on the computer via REDCap (Harris et al., 2009); adolescent completion of the Wechsler Abbreviated Scale of Intelligence, Second Edition (WASI-II; Wechsler, 2011); and completion of a conflict discussion task. Post-RELAX caregivers and adolescents completed the same social, emotional, and behavioral measures, and the feedback survey via REDCap. All 18 families that participated in the baseline visit also completed the post-RELAX ratings, with no missing data for any of the measures.

Clinical psychology graduate student clinicians (years of experience = 1-3) received the RELAX intervention manual and handouts to review in February 2019. Graduate students met with the first author, who developed the RELAX intervention, for 30 minutes each week to review session content. The in-person RELAX intervention was delivered between February and April 2019. Each week handouts were provided to families during the in-person groups. To increase adherence with the intervention and to prevent misbehavior from interfering with intervention content, a point system was utilized. Clinicians completed a checklist during each session that captured adolescent participation, homework completion, and group rule adherence. Adolescents could earn up to 3 points per session, 1 point for each of these desired behaviors. Adolescents earned a \$10 gift card when they reached 10 points, and could earn a \$5 (5-12 points total) or \$10 (≥ 13 points) gift card after the last session. At the end of the combined session, clinicians who lead the adolescent groups informed each adolescent with their caregiver present

of how many points they earned that session; during this time clinicians modeled the use of specific, positive praise. Caregivers earned an entry into a raffle for two \$25 gift cards for each session they attended and for each session they turned in completed homework.

Telehealth RELAX Pilot Intervention

Adolescent participants and their families were recruited between September 2020 and March 2021 via distribution of flyers, posts on social media, and emails to research participant databases. The recruitment flyer for telehealth used the same language as the in-person recruitment flyer. All 15 of the interested families met criteria for the study via a phone screen, and 14 were available to participate in one of three groups that were offered during Fall 2020 and Spring 2021. Three groups were conducted (two in fall 2020, one in spring 2021); participants were assigned to groups based on preference for day/time and such that number, gender, and age distribution were relatively equal across the groups.

Baseline visits took place via HIPAA-compliant Zoom. These visits were approximately 1.5 hours long and consisted of administration of a diagnostic interview jointly to caregivers and adolescents and the two Verbal Comprehension Index subscales of the Wechsler Intelligence Scale for Children, Fifth Edition (Wechsler, 2014) to estimate full scale IQ. Caregivers and adolescents completed social, emotional, and behavioral measures at home via REDCap (Harris et al., 2009) pre-RELAX and post-RELAX. All 14 families participated in the baseline visit, completed pre-RELAX ratings, and completed at least part of the post-RELAX ratings (i.e., one family only has caregiver data but no adolescent data).

Clinical psychology graduate student clinicians (years of experience = 0-3) received the RELAX intervention manual and handouts to review in October 2020. Graduate students met with the first author for 30 minutes each week via Zoom to review session content. Hard copies

of the handouts were mailed to families prior to the start of RELAX groups, and electronic copies were shown via the share screen feature in Zoom during sessions. To increase adherence with the intervention and to prevent misbehavior from interfering with intervention content, the aforementioned point system was monitored each session via a clinician-completed checklist. . Adolescents could earn up to 3 entries per session into a raffle for one \$25 gift card per group, which was drawn at the final session. This reduction in the amount of gift cards provided based on intervention engagement was made to try to increase the likelihood that this intervention could be implemented in community settings.

Measures

Intervention Feasibility

Intervention feasibility was measured using a clinician checklist at each session, which tracked attendance, participation in session activities and discussion, adherence to group rules, and homework completion during each session. Adolescents received either a “0” (not achieved) or a “1” (achieved) for each of the three desired behaviors. Each adolescent could earn up to 3 points per session, and up to 23 total points over the course of the 8-session treatment (i.e., could not receive a point for homework during the first session).

Intervention Acceptability

Intervention acceptability was measured using a 12-question caregiver survey and 10-question adolescent survey that was administered post-RELAX. Participants were asked to rate their experience during RELAX on a 5-point Likert scale, with lower mean values indicating greater agreement with the given statement (1 = *Strongly Agree*, 2 = *Agree*, 3 = *Neutral*, 4 = *Disagree*, 5 = *Strongly Disagree*). Example questions include “The RELAX Intervention was helpful in helping me manage my emotions” for adolescents and “I am satisfied with the

intervention services I and my child received” for caregivers.

Adolescent and Caregiver ED

Caregivers and adolescents completed the 36-item Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) about the adolescents’ difficulties understanding and regulating their emotions pre- and post-RELAX. Participants rated each item on how often they exhibited a series of behaviors from 1 (*Almost Never/0-10%*) to 5 (*Almost Always/91-100%*). A sum of all items was used in the present study; higher scores on the DERS indicated more ED. The DERS is often used to measure ED in samples of adolescents diagnosed with ADHD (e.g., Bunford et al., 2018). Cronbach’s alphas for were acceptable to good across informants, delivery format, and time points (α s = .69-.89). Caregivers also completed the DERS about their own difficulties understanding and regulating their emotions pre- and post-RELAX. A sum of all items was used in the present study; higher scores on the DERS indicated more ED. Cronbach’s alphas were good across delivery format and time points (α s = .79-.90).

Emotion Socialization

Caregivers completed the adolescent Coping with Children’s Negative Emotions Scale (Fabes et al., 1990), which includes 9 hypothetical scenarios in which an adolescent is upset, worried, or angry (e.g., “When my adolescent becomes nervous about some social situation that they have to face (such as a date or a party), I usually”). For each scenario parents rate the likelihood that they would respond with five different types of reactions on a 7 point Likert scale (1 = *Very Unlikely*, 7 = *Very Likely*). Reactions can be collapsed into supportive and non-supportive emotion socialization practices. Based on prior studies (e.g., Eisenberg et al., 1998; Fabes et al., 2001), supportive reactions included the Expressive Encouragement Reactions (e.g., “encourage them to express their feelings”), Emotion-Focused Reactions (e.g., “try to calm them

down by pointing out how much fun they will have”), and Problem-Focused Reactions (e.g., “give them advice about what to do in the social situation”); non-supportive reactions included Punitive Reactions (e.g., “get angry at them for being so emotional”) and Minimization Reactions (e.g., “tell them they are making a big deal about nothing”). Cronbach’s alphas were good for supportive ($\alpha=.74-.85$) and non-supportive ($\alpha=.83-.86$) reactions.

Caregiver-Adolescent Conflict

A 20-item true/false version of the Conflict Behavior Questionnaire (Prinz et al., 1979) was used in the present study to assess caregiver-adolescent conflict pre- and post-RELAX; this measure shows strong correlation with the full 44-item measure (Robin & Foster, 1989). This scale has been widely used in adolescent intervention research and found to have excellent internal consistency, adequate test–retest reliability, and evidence of validity in distinguishing distressed from non-distressed families (Foster & Robin, 1989). In this study, both adolescents and caregivers completed the scale and demonstrated acceptable to good reliability ($\alpha = .78-.98$).

Weekly Ratings

Each week, caregivers and clinicians each rated the adolescent’s behaviors over the past week in three problem areas: (1) family conflict (e.g., caregiver fighting with adolescent, adolescent fighting with siblings), (2) ED (e.g., being easily upset; becoming angry or embarrassed when upset; having a hard time getting things done when upset; having a hard time controlling behaviors when upset), and (3) poor communication (e.g., not telling you how they are feeling, getting physical or upset instead of using their words). Ratings were completed on a 7-point Likert scale (1 = *not at all a problem*, 3 = *moderately a problem*, 7 = *very much a problem*). Caregivers completed their ratings at the beginning of the group regarding behaviors over the past week; clinicians completed their ratings at the end of the group based on

observations during group and information discussed in-group regarding the past week.

Analytic Plan

Descriptive statistics and independent sample *t*-tests were used to analyze participant demographics, caregiver and adolescent feedback, and intervention feasibility. To examine treatment outcomes for measures of caregiver and adolescent ED, caregiver emotion socialization, family conflict, and adolescent communication, repeated measure ANOVAs in SPSS were run with treatment format included as a between-subjects factor, controlling for change in medication or therapy status. Given the small sample size, we focus our results and discussion on effect sizes rather than statistical significance, though coefficients and *p*-values are provided for all analyses. Effect sizes are reported as eta-squared (η^2), and can be interpreted such that values between 0.01 and 0.06 can be interpreted as small effects, values between 0.06 and 0.14 as medium effects, and values larger than 0.14 as large effects (Miles & Shevlin, 2001).

Results

Treatment Feasibility

Across both in-person and telehealth groups, excellent attendance was observed. Specifically, attendance rates averaged 87% for the in-person group and 95% for the telehealth group across the 8 sessions. Homework completion was a little lower, with 85% homework completion in the in-person group and 70% homework completion in the telehealth group.

Treatment Acceptability

Caregiver and adolescent feedback (see Table 2) indicated high rates of satisfaction with the group overall, including various aspects of the intervention (e.g., pacing, handouts, group format, home-exercise activities). Specifically, 88% of caregivers and 79% of adolescents reported being satisfied with the intervention. High rates of perceived usefulness for managing

emotions and reducing conflict and willingness to recommend the intervention to others were also observed—88% of caregivers and 82% of adolescents agreed that RELAX was helpful in reducing adolescent ED, 84% of caregivers and 70% of adolescents agreed that RELAX was helpful in reducing family conflict, and 94% of caregivers and 67% of adolescents answered *Agree* or *Strongly Agree* regarding recommending the RELAX intervention to a friend. No significant differences in feedback were found between the in-person and telehealth groups ($t_s = 0.00-2.06, p_s > .05$), except for adolescents' report of the order of the session content ($t = 2.22, p = .04$) and utility of the session handouts ($t = 2.14, p = .04$). The in-person groups rated both of these items as significantly more acceptable than the telehealth groups.

Treatment Efficacy

Results for treatment outcomes across the entire sample are presented in Table 3. Across the RELAX intervention, large improvements were found for caregiver- and clinician-rated adolescent ED ($\eta^2 = .176 - .479$). With regard to caregiver ED, small but non-significant improvements were found across both groups ($\eta^2 = .03$). Moderate decreases in parent non-supportive reactions were found ($\eta^2 = .11$), with this change being marginally significant. In contrast, rates of supportive reactions did not change during the RELAX intervention. These outcomes were not significantly different across the in-person and telehealth groups ($F_s = 0.20-1.85, p_s > .185$), except for clinician weekly ratings ($F = 4.29, p = .031$), where both groups improved significantly, but the telehealth group showed greater clinician-reported improvements than the in-person group ($t = 5.12$ vs. $2.41, p < .001$ and $p = .033$, respectively). Caregiver- and adolescent-reports of caregiver-adolescent conflict did not improve significantly ($\eta^2 = .013$ and $.003$, respectively) across the entire sample for global pre/post measures. However, caregiver-report of caregiver-adolescent conflict from pre- to post-treatment was significantly different

across the in-person and telehealth groups ($F = 20.91, p < .001$), with statistically significant improvements in the in-person group ($t = 2.32, p = .033$), but not the telehealth group ($t = -0.80, p = .437$). Large improvements were found for family conflict per caregiver and clinician weekly ratings for the full sample ($\eta^2 = .262$ and $.428$). Adolescent global ratings of family conflict and caregiver and clinician weekly ratings of family conflict did not differ across treatment modality ($F = 0.23-3.08, ps > .093$). Finally, caregiver and clinician weekly ratings of adolescent communication difficulties did not significantly improve, although small improvements were observed ($\eta^2 = .090$ and $.035$, respectively). The in-person and telehealth groups did not significantly differ with regard to caregiver- or clinician-reported adolescent communication ($F = 0.18$ and $3.00, p = .672$ and $.097$, respectively).

Discussion

The purpose of this study was to evaluate the feasibility, acceptability, and efficacy of RELAX for families of adolescents diagnosed with ADHD delivered via telehealth, and relative to the in-person RELAX groups. Pre-COVID-19, only one study had examined the efficacy of telehealth interventions for adolescents diagnosed with ADHD (Sibley et al., 2017); however, with the onset of the COVID-19 pandemic a rapid shift to telehealth was necessary for diagnosing and treating ADHD (see Breaux et al., 2021a for a review). Importantly, many experts believe that this telehealth boom will continue after the pandemic has ended (e.g., Bestsenny et al., 2020). As such, our findings of similar feasibility, acceptability, and efficacy for main treatment outcomes (i.e., adolescent ED, caregiver ED, emotion socialization, family conflict) for RELAX delivered via telehealth and in-person, suggest that telehealth interventions hold promise for reducing the high levels of ED and family conflict found among families of adolescents diagnosed with ADHD during the pandemic and beyond. These findings and their

clinical implications are discussed further below.

Strong Evidence of Feasibility and Acceptability across Intervention Formats

Findings regarding high feasibility in the present study are consistent with the only other telehealth intervention to date with families of adolescents diagnosed with ADHD (Sibley et al., 2017), which found that 85% of families attended all sessions and 70% of home activities were completed. In the current study, we found higher rates of attendance for telehealth (95%) than in-person (87%), with only 33% of families attending all sessions in person but 86% of families attending all sessions for telehealth. We also found acceptable homework completion in both formats, although homework completion was higher in the in-person groups (85%) relative to the telehealth groups (70%). It could be that the higher rates of parenting stress during the COVID-19 pandemic, particularly among caregivers of children with clinical disorders (Brown et al., 2020), may have made homework completion less of a priority for families, as caregivers often play a large role in reminding their adolescents of their home exercise activities and completing their homework worksheets. However, our rates for homework completion in the telehealth group were still high identical to those found in the Sibley et al., (2017) study, and higher than that found for other clinical adolescent intervention samples (Gaynor et al., 2006).

With regard to acceptability, caregivers and adolescents indicated high rates of satisfaction with RELAX overall (88% of caregivers, 79% of adolescents), including the pacing, handouts, group format, and home exercise activities. Additionally, high rates of perceived usefulness for managing emotions (88% of caregivers, 82% of adolescents) and reducing conflict (84% of caregivers, 70% of adolescents) were observed. Willingness to recommend RELAX to others was high for caregivers (94%), and acceptable for adolescents (67%). Importantly, this study is the first to empirically test differences in acceptability of the same intervention for

families of adolescents diagnosed with ADHD delivered in-person versus via telehealth.

Acceptability was largely equivalent across treatment delivery formats, with only two significant differences in feedback emerging—adolescents in the in-person groups reported that the order of the session content and utility of the handouts were more acceptable than the telehealth groups.

Informally, clinicians leading the telehealth groups anecdotally reported that adolescents often did not have their handouts with them, despite asking them to get the handouts in the beginning of group, which may have contributed to their lower perception of the handouts being useful.

The finding regarding differences in content order is harder to explain, given that RELAX groups naturally build on themselves. Specifically, emotion awareness and regulation strategies are taught in the first several groups, prior to discussing the importance of these strategies for interpersonal interactions, managing conflict, and engaging in collaborative problem-solving and conflict management discussions. It is possible that, given the high rates of caregiver-adolescent conflict occurring during the COVID-19 pandemic (e.g., Russell et al., 2020), adolescents in the telehealth groups may have preferred to address this content sooner in the intervention. It will be important for future research to examine the acceptability of the telehealth RELAX intervention during a time other than a global pandemic, as results may differ meaningfully.

Promising Treatment Outcomes Regardless of Intervention Format

Consistent with prior research suggesting comparable efficacy rates for telehealth and in-person treatment (see Ros-DeMarize et al., 2021), results of the present study suggest that RELAX has similar efficacy for adolescent and caregiver ED, caregiver emotion socialization, adolescent communication, and family conflict in both delivery formats. Specifically, large improvements in adolescent ED and family conflict, moderate decreases in non-supportive parenting practices, and small improvements in adolescent communication and caregiver ED

were observed across treatment modalities. The fact that such improvements were obtained with a brief, 8-session intervention is noteworthy and promising. RELAX was intentionally designed to be brief, given research suggesting that most families of youth diagnosed with ADHD who are enrolled in an intervention program complete only 6-10 sessions, with an average of 15 total contact hours (Lundahl et al., 2006). This suggests that even though longer interventions would provide more opportunities for skill rehearsal, these sessions may not be well attended by this clinical population. Similarly, prior intervention research with middle school students diagnosed with ADHD examining optimal dosing found that adolescents who attended fewer than 80% of the sessions performed at levels roughly equivalent to those who attended more often on measures of ADHD symptoms and academic difficulties at post-intervention, suggesting that having more sessions may not necessarily result in better treatment outcomes (Schultz et al., 2017). Future research should utilize an individualized approach to examining treatment outcomes and optimal dosage, as it is possible that some adolescents diagnosed with ADHD (e.g., those with comorbid externalizing disorders or autism spectrum disorder) may require more sessions to significantly benefit.

Despite similar treatment outcomes being observed for in-person and telehealth groups, two exceptions emerged. First, there was some evidence for larger improvements in clinician-report of adolescent ED for telehealth relative to in-person groups. This finding should not be overly interpreted, given non-significant differences across modality in caregiver and adolescent report of ED. Despite this, it is possible that adolescents were initially more behaviorally dysregulated during the telehealth groups since they were taking place in the groups from their own home rather than a clinic, and as clinicians more strongly enforced group rules (i.e., participating in activities/staying on topic, being respectful of other group members, limiting

background changes to once per group), a larger perception of improvements in regulation could have been observed. The other difference that emerged was that caregiver-adolescent conflict improved among the in-person families, but not the telehealth groups. This likely resulted at least partially from the telehealth groups occurring during the COVID-19 pandemic, a time when adolescents and parents were home together for many more hours each weekday and some weekend days due to remote or hybrid learning and work, and limited out-of-house, in-person contacts with individuals outside of one's family. This difference across delivery format might have provided for more opportunities for more family conflict, simply because family members were together for longer periods of time. Specifically, as mentioned above, prior research has found increased rates of caregiver-child conflict during the COVID-19 pandemic, likely as a result of the increased time families are spending together due to social distancing measures and the higher caregiver responsibility to support adolescent remote learning (e.g., Russell et al., 2020). Notably, adolescents diagnosed with ADHD have been found to have more difficulty adjusting to remote learning and stay-at-home orders, and caregivers of adolescents diagnosed with ADHD reported less confidence and more difficulty in supporting remote learning and home-school communication during the pandemic (Becker et al., 2020). This increased caregiver involvement in schooling and their increased work-home demands (Vaziri et al., 2020) may explain why improvements in family conflict (e.g., adolescent conflict with siblings) significantly improved, but caregiver-adolescent conflict did not in the telehealth groups.

Limitations

Despite the timeliness and strengths of this study, these results need to be interpreted with several limitations in mind. First, both the in-person and telehealth groups were delivered as part of pilot studies, with no control groups. This lack of a control group limits the conclusions we

can draw regarding treatment efficacy, as results may be reflective of regression to the mean. Future research utilizing a randomized controlled trial is needed to thoroughly assess the efficacy of RELAX delivered in person and/or via telehealth. Second, because the groups were delivered by the intervention developer and graduate clinicians receiving weekly supervision by the developer, more work is needed to assess the efficacy and feasibility of RELAX when delivered by community clinicians. Similarly, it will be critical to assess intervention fidelity in a systematic manner and how it relates to treatment outcomes. Third, due to the COVID-19 pandemic limiting in-person visits, we were unable to collect observational and psychophysiological data to assess ED and caregiver emotion socialization for the telehealth visits. As such, this study only utilizes informant report, which is subject to biases including social desirability for caregivers and adolescents and the lack of masking for clinician-report (i.e., all the clinicians rating the families were also involved in the intervention with them and thus may have been influenced by knowing they were participating in the intervention). Related to this, both caregiver ED and emotion socialization behaviors were only assessed based on self-report. In the telehealth pilot study we added weekly ratings assessing caregiver supportive and non-supportive practices; however, since this was only available for the telehealth and not in-person groups, these data were not able to be included in the present study. It will be important for future research to utilize a multi-method assessment of treatment outcomes. Fourth, there were several significant demographic differences between the in-person and telehealth pilot group samples, largely with regard to aspects of family socioeconomic status (i.e., family income, caregiver education, single parent status). These differences are surprising given that telehealth delivery is often able to reduce many of the barriers (e.g., child care, transportation) that are often present for in-person treatments (e.g., Eiraldi et al., 2006). However, the fact that

telehealth families were more likely to be from a higher socioeconomic status and to identify as White, may reflect the fact that these groups were held during the COVID-19 pandemic, which is disproportionately impacting Black, Latinx, and lower socioeconomic status groups. The in-person group was also very diverse in terms of race and socioeconomic status, but this diversity was consistent with the geographic area (i.e., Richmond, VA) in which these data were collected (e.g., 46.9% of residents identify as Black, median family income = \$45,117). Due to the small sample size, we were not able to statistically examine the potential effect these demographics differences may have on treatment outcomes. Exploring potential differential treatment effects based on family factors is an important area for future research. Finally, given that the telehealth groups were conducted during the COVID-19 pandemic, it is possible that the findings regarding the feasibility, acceptability, and efficacy of the telehealth RELAX intervention may differ if telehealth groups were conducted not during a global pandemic. Despite this concern, it is particularly noteworthy that similar efficacy and feasibility was found during the pandemic as pre-pandemic, given the increased rates of and associations between parenting stress, psychopathology, and family conflict occurring during the COVID-19 pandemic (e.g., Brown et al., 2020; Russell et al., 2020).

Conclusion

Results of the current study provide strong preliminary evidence for the feasibility, acceptability, and efficacy of the RELAX intervention for families of adolescents diagnosed with ADHD, delivered either in person or via telehealth. Findings add to the very limited prior research assessing the benefit of telehealth interventions for adolescents diagnosed with ADHD (Sibley et al., 2017) and the original development and pilot study of the in-person RELAX intervention (Breux & Langberg, 2020). Our finding of efficacy of the telehealth delivery

format, which was implemented during stressful circumstances (i.e., a global pandemic), provides strong indication that this intervention could be useful for adolescents with ADHD and their families, and should be evaluated further. Specifically, given a recent review of interventions targeting ED among adolescents, which highlighted the need for more randomized controlled trials with short and long-term follow-ups, and multi-method assessment of ED/emotion regulation skills (Eadeh et al., 2021), it will be critical for future research to evaluate both the in person and telehealth delivery of RELAX using such rigorous methodologies.

References

- Barber, B.K. (1994). Cultural, family, and personal contexts of parent-adolescent conflict. *Journal of Marriage and Family, 56*(2), 375-386. <https://doi.org/10.2307/353106>
- Barkley, R. A., Anastopoulos, A. D., Guevremont, D. C., & Fletcher, K. E. (1992). Adolescents with attention deficit hyperactivity disorder: Mother-adolescent interactions, family beliefs and conflicts, and maternal psychopathology. *Journal of Abnormal Child Psychology, 20*(3), 263-288. <https://doi.org/10.1007/BF00916692>
- Becker, S. P., Breaux, R., Cusick, C. N., Dvorsky, M. R., Marsh, N. P., Scriberras, E., Langberg, J. M. (2020). Remote learning during COVID-19: Examining school practices, service continuation, and difficulties for adolescents with and without ADHD. *Journal of Adolescent Health, 67*, 769-777. <https://doi.org/10.1016/j.jadohealth.2020.09.002>
- Bestsenny, O., Gilbert, G., Harris, A., & Rost, J. (2020). Telehealth: A quarter-trillion-dollar post-COVID-19 reality? *McKinsey & Company*.
- Brand, A. E., & Klimes-Dougan, B. (2010). Emotion socialization in adolescence: The roles of mothers and fathers. *New Directions for Child and Adolescent Development, 128*, 85–100. <https://doi.org/10.1002/cd.270>
- Branje, S. (2018). Development of parent-adolescent relation conflict interactions as mechanism of change. *Child Development Perspectives, 12*(3), 171-176. <https://doi.org/10.1111/cdep.12278>
- Breaux, R. P., McQuade, J. D., Harvey, E. A., & Zakarian, R. J. (2018). Longitudinal associations of parental emotion socialization and children's emotion regulation: The moderating role of ADHD symptomatology. *Journal of Abnormal Child Psychology, 46*(4), 671– 683. <https://doi.org/10.1007/s10802-017-0327-0>

- Breaux, R., Becker, S. P., & Dvorsky, M. R. (2021a). ADHD in COVID-19: Risk, resilience, and the rapid transition to telehealth. *The ADHD Report*, 29(2). ISSN 1065-8025.
<https://doi.org/10.1521/adhd.2021.29.2.1>
- Breaux, R., Dvorsky, M. R., Marsh, N. P., Green, C. D., Cash, A. R., Shroff, D. M., Langberg, J. M., & Becker, S. P. (2021b). Prospective impact of COVID-19 on adolescent mental health functioning in adolescents with and without ADHD: Protective role of emotion regulation abilities. *Journal of Child Psychology and Psychiatry*. Advanced Online Publication. <https://doi.org/10.1111/jcpp.13382>
- Brown, S. M., Doom, J. R., Lechuga-Peña, S., Watamura, S. E., & Koppels, T. (2020). Stress and parenting during the global COVID-19 pandemic. *Child Abuse & Neglect*, 110, 104699. <https://doi.org/10.1016/j.chiabu.2020.104699>
- Bunford, N., Evans, S. W., Becker, S. P., & Langberg, J. M. (2015). Attention-deficit/hyperactivity disorder and social skills in youth: A moderated mediation model of emotion dysregulation and depression. *Journal of Abnormal Child Psychology*, 43(2), 283–296. <https://doi.org/10.1007/s10802-014-9909-2>
- Bunford, N., Evans, S. W., & Langberg, J. M. (2018). Emotion dysregulation is associated with social impairment among young adolescents with ADHD. *Journal of Attention Disorders*, 22(1), 66-82. <https://doi.org/10.1177%2F1087054714527793>
- Cole, P. M., Dennis, T. A., Smith-Simon, K. E., & Cohen, L. H. (2009). Preschoolers' emotion regulation strategy understanding: Relations with emotion socialization and child self-regulation. *Social Development*, 18(2), 324–352. <https://doi.org/10.1111/j.1467-9507.2008.00503.x>
- Denham, S. A., Mitchell-Copeland, J., Strandberg, K., Auerbach, S., & Blair, K. (1997). Parental

- contributions to preschoolers' emotional competence: Direct and indirect influences. *Motivation and Emotion*, 21, 65–86. <https://doi.org/10.1023/A:1024426431247>
- Eadeh, H., Breaux, R., & Nikolas, M. A. (2021). A meta-analytic review of emotion regulation focused psychosocial interventions for adolescents. *Clinical Child and Family Psychology Review*, Under Review.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9, 241–273. https://doi.org/10.1207/s15327965pli0904_1
- Eisenberg, N., & Spinrad, T.L. (2004). Emotion-related regulation: Sharpening the definition. *Child Development*, 75, 334-339. <https://doi.org/10.1111/j.1467-8624.2004.00674.x>
- Eiraldi, R. B., Mazzuca, L. B., Clarke, A. T., & Power, T. J. (2006). Service utilization among ethnic minority children with ADHD: A model of help-seeking behavior. *Administration and Policy in Mental Health and Mental Health Services Research*, 33(5), 607-622. <https://doi.org/10.1007/s10488-006-0063-1>
- Fabes, R.A., Eisenberg, N., & Bernzweig, J. (1990). *The Coping with Children's Negative Emotions Scale: Procedures and scoring*. Available from authors. Arizona State University, Tempe.
- Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development*, 72(3), 907–920. <https://doi.org/10.1111/1467-8624.00323>
- Foster, S. L., & Robin, A. L. (1989). *Parent-adolescent conflict*. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of childhood disorders* (pp. 493–528). Guilford Press.
- Gaynor, S. T., Lawrence, P. S., & Nelson-Gray, R. O. (2006). Measuring homework compliance in cognitive-behavioral therapy for adolescent depression: Review, preliminary findings,

and implications for theory and practice. *Behavior Modification*, 30(5), 647-672.

<https://doi.org/10.1177/0145445504272979>

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41-54. <https://doi.org/10.1023/B:JOBA.0000007455.08539.94>

Graziano, P. A., and Garcia, A. (2016). Attention-deficit hyperactivity disorder and children's emotion dysregulation: A meta-analysis. *Clinical Psychological Review*, 46, 106–123. <https://doi.org/10.1016/j.cpr.2016.04.011>

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*, 42, 377-381. <https://doi.org/10.1016/j.jbi.2008.08.010>

Johnston, C., & Chronis-Tuscano, A. (2015). Families and ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed., pp. 191–209). New York, NY: The Guilford Press.

Laursen, B., & Collins, W.A. (1994). Interpersonal conflict during adolescence. *Psychological Bulletin*, 115(2), 197–209. <https://doi.org/10.1037/0033-2909.115.2.197>

Lopes, P.N., Nezlek, J.B., Extremera, N., Hertel, J., Fernández-Berrocal, P., Schütz, A., & Salovey, P. (2011). Emotion regulation and the quality of social interaction: Does the ability to evaluate emotional situations and identify effect responses matter? *Journal of Personality*, 79(2), 429-467. <https://doi.org/10.1111/j.1467-6494.2010.00689.x>

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training:

- Moderators and follow-up effects. *Clinical Psychology Review*, 26(1), 86-104.
<https://doi.org/10.1016/j.cpr.2005.07.004>
- Mazursky-Horowitz, H., Felton, J. W., MacPherson, L., Ehrlich, K. B., Cassidy, J., Lejuez, C. W., & Chronis-Tuscano, A. (2015). Maternal emotion regulation mediates the association between adult attention-deficit/hyperactivity disorder symptoms and parenting. *Journal of Abnormal Child Psychology*, 43(1), 121-131. <https://doi.org/10.1007/s10802-014-9894-5>
- McCarty, C.A. & Weisz, J.R. (2002), Correlates of expressed emotion in mothers of clinically referred youth: An examination of the five-minute speech sample. *Journal of Child Psychology and Psychiatry*, 43, 759-768. <https://doi.org/10.1111/1469-7610.00090>
- McFayden, T. C., Breaux, R., Bertollo, J. R., Cummings, K., & Ollendick, T. H. (2021). COVID-19 remote learning experiences of youth with neurodevelopmental disorders in rural Appalachia. *Journal of Rural Mental Health*. 45(2), 72-85.
<https://doi.org/10.1037/rmh0000171>
- McGrath, J. (2020). ADHD and Covid-19: Current roadblocks and future opportunities. *Irish Journal of Psychological Medicine*, 37(3), 204-211. <https://doi.org/10.1017/ipm.2020.53>
- Meinzer, M. C., Oddo, L. E., Garner, A. M., & Chronis-Tuscano, A. (2020). Helping college students with attention-deficit/hyperactivity disorder SUCCEED: A comprehensive care model. *Evidence-Based Practice in Child and Adolescent Mental Health*, Advanced Online Publication. <https://doi.org/10.1080/23794925.2020.1796548>
- Miles, J. and Shevlin, M. (2001) *Applying Regression and Correlation: A Guide for Students and Researchers*. Sage: London.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of family context in the development of emotion regulation. *Social Development*, 16, 361–

388. <https://doi.org/10.1111/j.1467-9507.2007.00389.x>
- Myers, K., Vander Stoep, A., Zhou, C., McCarty, C. A., & Katon, W. (2015). Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, *54*(4), 263–274. <https://doi.org/10.1016/j.jaac.2015.01.009>
- Oddo, L. E., Miller, N. V., Felton, J. W., Cassidy, J., Lejuez, C. W., & Chronis-Tuscano, A. (2020). Maternal emotion dysregulation predicts emotion socialization practices and adolescent emotion lability: Conditional effects of youth ADHD symptoms. *Research on Child and Adolescent Psychopathology*, Advanced Online Publication. <https://doi.org/10.1007/s10802-020-00686-9>
- Oddo, L. E., Garner, A., Novick, D. R., Meinzer, M. C., & Chronis-Tuscano, A. (2021) Remote delivery of psychosocial intervention for college students with ADHD during COVID-19: Clinical strategies, practice recommendations, and future considerations. *Evidence-Based Practice in Child and Adolescent Mental Health*, *6*(1), 99-115. <https://doi.org/10.1080/23794925.2020.1855614>
- Prinz, R. J., Foster, S., Kent, R. N., & O'Leary, K. D. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. *Journal of Applied Behavior Analysis*, *12*(4), 691-700. <https://doi.org/10.1901/jaba.1979.12-691>
- Ros-DeMarize, R., Chung, P., & Stewart, R. (2021). Pediatric behavioral telehealth in the age of COVID-19: Brief evidence review and practice considerations. *Current Problems in Pediatric and Adolescent Health Care*, *51*. <https://doi.org/10.1016/j.cppeds.2021.100949>
- Russell, B. S., Hutchison, M., Tambling, R., Tomkunas, A. J., & Horton, A. L. (2020). Initial challenges of caregiving during COVID-19: Caregiver burden, mental health, and the

- parent–child relationship. *Child Psychiatry and Human Development*, 51(5), 671–682.
<https://doi.org/10.1007/s10578-020-01037-x>
- Sanders, W., Zeman, J., Poon, J., & Miller, R. (2015). Child regulation of negative emotions and depressive symptoms: The moderating role of parental emotion socialization. *Journal of Child and Family Studies*, 24(2), 402–415. <https://doi.org/10.1007/s10826-013-9850-y>
- Schultz, B. K., Evans, S. W., Langberg, J. M., & Schoemann, A. M. (2017). Outcomes for adolescents who comply with long-term psychosocial treatment for ADHD. *Journal of Consulting and Clinical Psychology*, 85(3), 250–261. <https://doi.org/10.1037/ccp0000172>
- Sharma, A., Sasser, T., Schoenfelder Gonzalez, E., Vander Stoep, A., & Myers, K. (2020). Implementation of home-based telemental health in a large child psychiatry department during the COVID-19 crisis. *Journal of Child and Adolescent Psychopharmacology*, 7, 404–413. <https://doi.org/10.1089/cap.2020.0062>
- Shaw, P., Stringaris, A., Nigg, J., & Leibenluft, E. (2014). Emotion dysregulation in attention deficit hyperactivity disorder. *American Journal of Psychiatry*, 171(3), 276–293.
<https://doi.org/10.1176/appi.ajp.2013.13070966>
- Shek, D.T. (1998). A longitudinal study of the relations between parent-adolescent conflict and adolescent psychological well-being. *The Journal of Genetic Psychology*, 159(1), 53–67.
<https://doi.org/10.1080/00221329809596134>
- Sibley, M. H., Comer, J. S., & Gonzalez, J. (2017). Delivering parent-teen therapy for ADHD through videoconference: A preliminary investigation. *Journal of Psychopathology and Behavioral Assessment*, 39(3), 467–485. <https://doi.org/10.1007/s10862-017-9598-6>
- Smetana, J.G. (1989). Adolescents' and parents' reasoning about actual family conflict. *Child Development*, 60(5), 1052–1067. <https://doi.org/10.2307/1130779>

- Spear, H.J. & Kulbok, P. (2004). Autonomy and adolescence: A concept analysis. *Public Health Nursing, 21*(2), 144-152. <https://doi.org/10.1111/j.0737-1209.2004.021208.x>
- Spencer, T., Noyes, E., & Biederman, J. (2020). Telemedicine in the Management of ADHD: Literature Review of Telemedicine in ADHD. *Journal of Attention Disorders, 24*(1), 3-9. <https://doi.org/10.1177%2F1087054719859081>
- Theule, J., Wiener, J., Tannock, R., & Jenkins, J. M. (2013). Parenting stress in families of children with ADHD: A meta-analysis. *Journal of Emotional and Behavioral Disorders, 21*(1), 3-17. <https://doi.org/10.1177%2F1063426610387433>
- Vaziri, H., Casper, W. J., Wayne, J. H., & Matthews, R. A. (2020). Changes to the work–family interface during the COVID-19 pandemic: Examining predictors and implications using latent transition analysis. *Journal of Applied Psychology*. Advanced Online Publication. <https://doi.org/10.1037/apl0000819>
- Wechsler, D. (2011). Wechsler abbreviated scale of intelligence—second edition. *San Antonio, TX: NCS Pearson*.
- Wechsler, D. (2014). Wechsler intelligence scale for children—Fifth Edition (WISC-V). *Bloomington, MN: Pearson*.
- Weller, E. B., Weller, R. A., Fristad, M. A., Rooney, M. T., & Schecter, J. (2000). Children's interview for psychiatric syndromes (ChIPS). *Journal of the American Academy of Child & Adolescent Psychiatry, 39*, 76-84. <https://doi.org/10.1097/00004583-200001000-00019>
- Wolraich, M. L., Lambert, W., Doffing, M. A., Bickman, L., Simmons, T., & Worley, K. (2003). Psychometric properties of the Vanderbilt ADHD diagnostic parent rating scale in a referred population. *Journal of Pediatric Psychology, 28*(8), 559-568. <https://doi.org/10.1093/jpepsy/jsg046>

Table 1*Demographic information for in-person and telehealth RELAX groups*

Variable Name	In-Person (<i>n</i> = 18) <i>M</i> (<i>SD</i>) or %	Telehealth (<i>n</i> = 14) <i>M</i> (<i>SD</i>) or %	<i>t</i> or χ^2	<i>p</i>
Adolescent Age	13.44 (1.62)	12.79 (1.12)	1.30	.204
Adolescent Sex (% Male)	66.67%	57.14%	0.31	.581
Adolescent Race (% White)	55.56%	85.71%	9.84	.020
Adolescent Ethnicity (% Latinx)	11.11%	7.14%	0.15	.702
Taking Medication Currently	77.78%	57.14%	1.56	.212
Current Grade	8.17 (1.76)	7.50 (1.01)	1.26	.217
IEP or 504 Status	77.78%	46.15%	3.30	.069
Primary Caregiver Age	46.71 (7.20)	45.14 (3.96)	0.73	.474
Primary Caregiver Education (% college graduate or higher)	33.33%	92.86%	16.56	.001
Single Family Home	55.56%	7.14%	8.18	.004
Family Income	\$64,444.44 (37650.44)	\$123,141.71 (43675.88)	4.08	<.001

Note. IEP = Individualized Education Program. In the *t* or χ^2 column, t-statistics reported for continuous measures, chi-square statistics reported for dichotomous or categorical variables.

Table 2*Descriptive statistics for feedback across sample and differences in feedback across modality*

	<i>M (SD)</i>	<i>t</i>	<i>p</i>
Parent Ratings			
I am satisfied with the intervention services I and my child received through the study	1.56 (0.72)	0.55	.584
The pacing of the RELAX intervention felt right (e.g., I did not want to spend any more or less time on any one area)	1.97 (1.03)	0.15	.883
The order of the session content made sense	1.50 (0.57)	0.00	.999
The handouts used during sessions facilitated discussion/engagement in session content	1.47 (0.67)	0.23	.820
Having a group format for the RELAX intervention was helpful (e.g., being able to discuss ideas and hear from other parents whose adolescents had similar struggles)	1.25 (0.51)	0.35	.732
Attending the weekly intervention services was manageable (e.g., was held at a time that was convenient, time commitment was appropriate)	1.56 (0.80)	0.38	.704
Completing the weekly homework was manageable	2.12 (1.16)	0.23	.822
The RELAX intervention was enjoyable for me	1.72 (0.99)	0.33	.742
The RELAX intervention was enjoyable for my child	1.91 (0.86)	1.40	.172
The RELAX intervention was helpful in reducing emotion dysregulation in my child	1.97 (0.90)	1.83	.078
The RELAX intervention was helpful in reducing conflict between myself and my adolescent	1.78 (0.79)	0.47	.641
I would recommend the RELAX intervention to a friend whose child had similar struggles as my child.	1.37 (0.61)	0.43	.668
Adolescent Ratings			
I am satisfied with the intervention services I received through the study.	1.96 (0.92)	1.96	.061
The pacing of the RELAX intervention felt right (e.g., I did not want to spend any more or less time on any one area)	1.89 (0.88)	1.41	.171
The order of the session content made sense	1.79 (0.78)	2.22	.035
The handouts used during sessions facilitated discussion/engagement in session content	2.00 (0.98)	2.14	.042
Having a group format for the RELAX intervention was helpful (e.g., being able to discuss ideas and hear from other adolescents who had similar struggles)	1.79 (0.79)	0.57	.576
Completing the weekly homework was manageable	2.07 (0.90)	1.98	.059
The RELAX intervention was enjoyable for me	1.88 (0.86)	2.06	.050
The RELAX intervention was helpful in helping me manage my emotions	1.85 (1.03)	0.57	.575
The RELAX intervention was helpful in reducing conflict between myself and my parent(s)	1.93 (1.17)	0.25	.807
I would recommend the RELAX intervention to a friend who had similar struggles as my own.	2.00 (1.00)	0.00	.999

Note. RELAX = Regulating Emotions Like An eXpert

Table 3

Descriptive Statistics and effect sizes for repeated measure ANOVAs for study outcomes across entire sample

	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2
<u>Parent Ratings</u>					
Adolescent Emotion Dysregulation	54.88 (7.05)	51.53 (6.81)	8.38	.007	.224
Parent-Adolescent Conflict	8.53 (4.79)	7.13 (4.77)	0.38	.540	.013
Parent Emotion Dysregulation	45.47 (8.87)	44.16 (8.98)	1.01	.324	.034
Parent Supportive Reactions	4.48 (0.85)	4.52 (1.01)	0.02	.903	.001
Parent Non-Supportive Reactions	2.89 (0.88)	2.71 (0.79)	3.43	.074	.106
<u>Adolescent Ratings</u>					
Adolescent Emotion Dysregulation	50.93(5.77)	50.21 (8.12)	0.08	.780	.003
Parent-Adolescent Conflict	9.15 (6.65)	6.89 (6.04)	0.02	.904	.001
<u>Parent Weekly Ratings</u>					
Adolescent Emotion Dysregulation	4.61 (1.50)	2.71 (1.56)	5.57	.026	.176
Poor Communication	3.86 (1.86)	2.50 (1.55)	2.56	.121	.090
Family Conflict	4.14 (1.78)	2.75 (1.35)	9.25	.005	.262
<u>Clinician Weekly Ratings</u>					
Adolescent Emotion Dysregulation	5.00 (1.55)	3.36 (1.11)	22.21	<.001	.479
Poor Communication	4.64 (1.82)	3.32 (1.03)	0.81	.379	.035
Family Conflict	4.48 (1.39)	2.68 (1.22)	16.49	.001	.428

Note. Analyses controlled for change in medication or individual therapy status during the course of the RELAX intervention. Parent and Adolescent Emotion Dysregulation measured using the Difficulties in Emotion Regulation Scale. Parent-Adolescent Conflict measured using the Conflict Behavior Questionnaire.