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A Nonconcurrent Multiple Baseline Evaluation of an Independence Intervention to Treat Child Anxiety

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**A Nonconcurrent Multiple Baseline Evaluation of an Independence Intervention to Treat
Child Anxiety**

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Abstract

Rates of child and adolescent anxiety have increased markedly over the past decade (Haidt & Twenge 2021; Parodi et al., 2021). Exposure-based cognitive-behavioral therapy is considered the gold standard in the treatment of anxious children (Hofmann et al., 2012). However, many clinicians refrain from using exposure due to concerns about its safety, effectiveness, and ethics (Deacon et al., 2013; Whiteside et al., 2016). We propose a novel treatment approach for child and adolescent anxiety that draws on research in child development (e.g. Daddis, 2011) and is considerably simpler to administer than traditional exposure-based approaches. This new approach is composed of independence activities (IAs), which are defined as child-directed, fun, unstructured, developmentally challenging tasks that are performed without any help from parents. These tasks are purposely topographically unrelated to the stimuli that cause anxiety, in direct contrast to exposure therapy, which is topographically similar to anxiety-causing stimuli. Despite this dissimilarity, IAs target the hypothesized mechanisms involved in the development and maintenance of child anxiety (e.g. parental accommodation and overinvolvement, child avoidance, and unhelpful thinking styles). IAs also target decreasing rates of child independence from parents, which may in and of itself be an important mechanism in the development of child anxiety (Skenazy, 2021). It was hypothesized that treating child anxiety in this way, without requiring exposure exercises, would result in high treatment acceptability from children and parents. This study employed a nonconcurrent multiple baseline design to examine independence activities as an intervention for child anxiety and independence as a mechanism of child anxiety. Small to large improvements in child (behavioral and cognitive) mechanisms involved in the maintenance of child anxiety, measures of child anxiety and avoidance, parent (behavioral and cognitive) mechanisms involved in the maintenance of child anxiety, and untargeted secondary

outcomes such as child happiness were observed. Results have valuable theoretical implications for our understanding of the role that parental overinvolvement plays in child anxiety.

A Nonconcurrent Multiple Baseline Evaluation of an Independence Intervention to Treat Child Anxiety

Indicators of mental health in children and adolescents in the United States and around the world have been worsening over the past decade (Bitsko et al., 2018, Twenge et al., 2021). Data derived from surveys of children aged 6-17 administered by the National Survey of Children's Health (NSCH) indicated significant increases in lifetime diagnoses of anxiety disorders or depressive disorders from 5.4% in 2003 to 8.4% in 2011-2012 (Bitsko et al., 2018). Those trends continued in the second decade of the century. Haidt & Twenge (2021) have created an open-source literature review to track trends in adolescent mental health with emerging data, which currently suggests that the trend has not abated, with sharp increases in depression, anxiety, suicidal ideation, self-harm, suicide attempts, and suicide from 2010 through 2021.

Impairing anxiety has become particularly common among children and adolescents. A 2016 nationally representative survey found clinical levels of anxiety in 7.1% of children aged 3-17 (Ghandour et al., 2019). A diverse sample of 37,360 children aged 14-18 was screened in 2012, 2015, and 2018 for anxiety symptoms and showed a rise in the prevalence of clinical levels of anxiety from 34.1% in 2012 to 44% in 2018 (Parodi et al., 2021).

In the prevailing conceptualization of anxiety, the emotion serves an adaptive function when it facilitates avoidance of real danger through heightened alertness and physiological arousal. It is considered worthy of clinical intervention when it becomes severe, frequent, and persistent and when it leads to impairment and distress in the absence of real threats (American Psychiatric Association, 2013; Beesdo et al., 2009). The distinction between adaptive and maladaptive anxiety in children can be difficult to make, as healthy children have many fears that are typical of their respective stages of development (Muris et al., 1998).

Several behavioral and cognitive mechanisms play a role in the development and maintenance of anxiety in children (and adults) (Hudson & Rapee, 2004). Behavioral avoidance of threatening stimuli is often negatively reinforced because it leads to a reduction in anxiety (Brown et al., 2013; Maner & Schmidt, 2006). Avoidance is a mechanism because it deprives the subject of the opportunity for corrective learning, which in turn increases the likelihood of persistent anxiety and continued avoidance (Dymond & Roche, 2009). Children with clinical levels of anxiety also typically possess unhelpful cognitions including self-blame, self-doubt, catastrophizing, emphasizing negatives, and refraining from positive reappraisals of negative events (Dodd et al., 2021; Garnefski et al., 2006; Legerstee et al., 2010). The tendencies to appraise ambiguous situations as threatening, to overestimate threat, and to undervalue one's ability to tolerate these situations are all associated with avoidance behaviors and clinically significant anxiety, and these mechanisms maintain and often exacerbate anxiety symptoms as children age (Maner & Schmidt, 2006; Stuijzand et al., 2018).

In children, clinically significant anxiety does not occur in a vacuum. It is theorized that for many children, parents play an important role in the development and maintenance of their anxiety (Rapee et al., 2009). Three parenting constructs have been identified in the literature as etiological factors of child anxiety. First, parents may model anxious avoidance for their children (Bayer et al., 2006; Wei & Kendall, 2014). By avoiding anxiety-provoking situations, parents may teach their children to behave similarly through the mechanism of vicarious learning (Fisak & Grills-Taquechel, 2007; Wei & Kendall, 2014). Second, parental accommodation of anxious avoidance may facilitate children's avoidance and safety behaviors by providing reassurance, validation, and doing what children are afraid of for them (Norman et al., 2015). Parents may also avoid situations that trigger anxiety in their children (Lebowitz et al., 2013). The resulting

short-term anxiety reduction negatively reinforces dependence and avoidance in children, thus maintaining anxiety symptoms (Norman et al., 2015). Third, parental overinvolvement has been found to be positively associated with anxiety severity in children (Beesdo et al., 2010; Rapee et al., 1997). Parental overinvolvement can be defined as a parenting style characterized by involvement in most of a child's decisions, including decisions where parental involvement is inappropriate given the child's level of development (Van Ingen et al., 2008). Anxious parents often have heightened perceptions of risk, which may lead to restrictive parenting and overinvolvement (Wei & Kendall, 2014) including less willingness to allow their children to play alone (Aziz & Said, 2012). As children of overinvolved parents are given less opportunity to independently handle challenging experiences, they are given fewer chances to develop coping and problem-solving skills, which impacts their skills development and may increase their belief that they cannot tolerate stress and discomfort (Segrin et al., 2013).

While selective serotonin norepinephrine reuptake inhibitors (SNRIs) and selective serotonin reuptake inhibitors (SSRIs) have demonstrated moderate effect sizes in clinical trials with clinically anxious patients (Bandelow et al., 2017), cognitive-behavioral therapy (CBT) is considered the frontline treatment for anxiety for all ages (Hofmann et al., 2012; Kendall, 2005). Meta-analyses have consistently found medium to large effect sizes for CBT at reducing anxiety symptoms across several anxiety disorders in children and adults (Carpenter et al., 2018; Hans & Hiller, 2013; Hofmann et al., 2012; Kendall et al., 2005; Lau et al., 2010). Many studies have also demonstrated the efficacy of manualized, evidence-based CBT interventions for parents of children with anxiety who accommodate their children's anxiety (e.g., Freeman et al., 2008; Lebowitz et al., 2014; Thompson-Holland et al., 2014a).

The main ingredient of most CBT approaches for children's anxiety is exposure with blocked escape to stimuli related to the child's fear (Kendall et al., 2005). Exposure is meant to deliberately evoke anxious feelings and cognitions, with the goals of violating negative expectancies of harm, decontextualizing inhibitory associations, and increasing tolerance of distress. Although habituation plays a natural role in the reduction of anxiety symptoms, modern applications of exposure therapy set out to decrease avoidance by creating new associations through learning that inhibit older, anxiety-provoking associations (Craske et al., 2008).

While CBT for youth has been shown to be effective, it can be expensive and hard to find for families. The median cost of a therapy session in 2018 was \$125 per 45-minute session (Editorial Staff, 2019). Across an average of 12-16 sessions, the total cost may become prohibitively expensive for many families (Collins et al., 2004; Seligman & Ollendick, 2011). Moreover, there is an insufficient number of practicing cognitive-behavioral therapists in many areas (Collins et al., 2004). Census data indicates that licensed psychologists are highly concentrated in urban areas, with 34.5% of all counties in the United States reporting zero total practicing psychologists (Lin et al., 2016). As a result, of the children and adolescents who have elevated mental health symptoms or clinical diagnoses, only 22.1% utilize school-based mental healthcare, 20.6% utilize outpatient treatment, and less than 10% utilize primary care, inpatient, or child welfare (Duong et al., 2021).

While CBT for anxiety in children is considered the front-line approach, a significant percentage of children who receive CBT do not experience relief. Among children with anxiety disorders who undergo traditional CBT for anxiety, approximately 34-41% maintain their primary diagnosis (James et al., 2015; Seligman & Ollendick, 2011). Among children who experience a significant reduction in anxiety symptoms, many regress; Ginsburg et al. (2014)

reported a relapse rate of 46.5% among anxious youth who were initially responders to treatment.

Several research groups have investigated novel treatment modalities for anxious children in an effort to address the limitations of exposure-based CBT. Öst (1989) developed a one-session exposure-based CBT treatment model for specific phobias that addresses the cost and length of traditional CBT approaches. This treatment resulted in significant improvement in 90% of participants after a single 2-hour session on average. This protocol involves multiple consecutive exposure exercises that gradually increase in difficulty based on the patient's fear hierarchy. Large effect sizes have been documented across multiple studies measuring reductions in the intensity of anxiety responses to feared stimuli in children (Ollendick & Davis, 2013; Öst & Ollendick, 2017; Zlomke & Davis, 2008). Other research groups have found strong evidence for easily accessible treatments, including remote and electronic delivery of CBT (Andersson, 2006; Bekker et al., 2016; Nordgren et al., 2014; Thase et al., 2020), therapist-supported bibliotherapy (Cobham, 2012), virtual reality exposure therapy for phobias (Powers & Emmelkamp, 2008), and parent-delivered CBT groups with brief psychoeducation and training (Esbjörn et al., 2019).

One-session treatments and novel treatment delivery methods address many of the barriers to the effective delivery of exposure-based CBT for childhood anxiety. However, they do not solve the single biggest factor standing in the way of widespread use of exposure for child anxiety--clinician and (to a lesser degree) parent and child reluctance to use exposure itself. A stubbornly low percentage of clinicians use exposure-based approaches for anxiety in children (Deacon et al., 2013; Whiteside et al., 2016). Most clinicians rely on cognitive restructuring strategies and anxiety management strategies rather than exposure for anxious youth (Reid et al.,

2018). A survey of 331 clinicians who treat children found that 40% *never* use exposure, only 5% use exposure more than other anxiety therapies, and exposure comprised less than one-fifth of the total techniques endorsed by this sample (Whiteside et al., 2016). When exposure *is* used, most clinicians opt for less intensive and thus less effective forms of exposure, such as imaginal or client self-directed exposure (Reid et al., 2018). Reasons behind the reluctance of clinicians to use exposure include unfavorable beliefs about exposure itself, such as that it is challenging, unethical, exacerbatory, or cruel, as well as negative beliefs about children's ability to tolerate and benefit from exposure (Deacon et al., 2013; Gunter & Whittal, 2010; Whiteside et al., 2016). Myths also exist about exposure among patients, such as that it is inflexible, insensitive, and harmful, that it does not generalize outside of the therapist's office, and that symptoms worsen after its use (Feeny et al., 2003). Due to these factors, clinicians often have fears of exposure resulting in ethical violations and litigation, despite research demonstrating that exposure to feared stimuli is safe and tolerable (Olatunji et al., 2009; Richard & Gloster, 2007).

One non-exposure approach that has shown promise is Supportive Parenting for Anxious Childhood Emotions (SPACE). SPACE is a 12-session treatment that targets parental accommodation and was found to be comparably efficacious to traditional CBT for children's anxiety (Lebowitz et al., 2020). This treatment teaches parents to systematically monitor and problem-solve ways to reduce accommodation, and to use effective coping strategies to address their child's increased distress over the reduction in accommodation (Lebowitz et al., 2020). In teaching parents new strategies without directly involving children, the risk of parent-child conflict is reduced, and the treatment may be effective even when the children are not amenable to psychotherapy (Lebowitz & Majdick, 2020). Children's and parents' credibility and

satisfaction ratings for SPACE were found to be high and not significantly different from traditional CBT (Lebowitz et al., 2020).

Parental accommodation-focused treatments do not directly involve exposure to anxiety-producing stimuli and thus address therapist and client fears about exposing children to fear-inducing stimuli. However, they require high levels of parental involvement, which can be difficult for parents, particularly those who are anxious about the same stimuli as their children or worried about seeing anxious distress in their children (Thompson-Hollands et al., 2014b). Parents of anxious children may exhibit experiential avoidance, which is an unwillingness to experience one's own anxiety or distress, and may lead to an unwillingness to tolerate anxiety or distress in their children due to the evocation of negative emotions in themselves (Tiwari et al., 2008). When children are in distress, anxious parents often intervene and increase accommodations, which may hinder the child's ability to learn that they can independently tolerate and cope with anxiety-producing situations (Hudson et al., 2008). Children also commonly exhibit behavioral and emotional escalation (extinction bursts) when parents withdraw accommodative support (Johnco, 2016). This response can be aversive to parents and lead to a return of accommodation to secure short-term relief from the child's escalation.

In order to address the barriers inherent in both exposure-based and accommodation-reducing CBT interventions, we propose a novel approach to child anxiety that leverages the universal developmental desire in children to be independent. We propose a cognitive-behavioral intervention that is primarily child-focused and whose goal is to collaboratively encourage children to engage in challenging but fun activities without the involvement of parents. Intervening to increase independence as a treatment for childhood anxiety is based on empirical findings on the mechanisms involved in the development and

maintenance of child anxiety. These putative mechanisms are avoidance of anxiety-producing stimuli (Hudson & Rapee, 2004), maladaptive cognitions (Garnefski et al., 2006; Legerstee et al., 2010; Maner & Schmidt, 2006), parental modeling of avoidance (Bayer et al., 2006; Wei & Kendall, 2014), parental overinvolvement (Beesdo et al., 2010; Rapee et al., 1997), and parental accommodation (Norman et al., 2015).

Independence activities target the behavioral mechanism of avoidance of anxiety-producing stimuli by capitalizing on the strong developmental desire of children to effectuate less parental involvement over time. Children desire and strive for autonomy (Daddis, 2011). Erik Erikson argued that the struggle for autonomy begins as early as the second or third year of life, as children develop motor function and begin to learn how to perform actions on their own (Elkind, 1970). As independence may be a strong motivator for children in and of itself, children may be willing to pursue activities that they previously avoided (Skenazy, 2021). These tasks may help anxious children to build the cognitive coping skills and self-confidence necessary to reduce their anxiety symptoms (Dodd et al., 2021). Importantly, independence does not mean that children seek to be solitary. Children mostly seek to be free of parental supervision and enjoy independence activities that involve other children. In fact, children enjoy problem-solving activities more when they can do them with friends (Over, 2016; Perlmutter et al., 1989). Another reason that independence activities target behavioral avoidance is that they are often fun, an advantage over exposure and accommodation-focused approaches.

Performing activities independently may also address cognitive mechanisms of childhood anxiety. Beck et al. (1985) postulated that anxious individuals think of themselves as vulnerable and of the world as dangerous and unpredictable. Self-blame, self-doubt, catastrophization, and overestimation of threat will likely negatively affect children's confidence in anticipation of

increasing their independence (Garnefski et al., 2006; Legerstee et al., 2010; Maner & Schmidt, 2006; Stuijzand et al., 2018). However, their anxiogenic beliefs about their self-efficacy may change if they are capable of doing tasks and problem-solving without parental help. They may also learn that they can cope with and tolerate negative emotions and discomfort without relying on parents. Independence activities could promote a strong internal locus of control in children who complete them, which has been identified as a strong predictor of child anxiety, and thus reinforce the belief that it is within their power to control and change their own lives (Gray et al., 2023). Independence activities could, in effect, serve as behavioral experiments for children in that they provide the opportunity for corrective learning about themselves, others, and the world.

Independence activities for children may also target *parental* mechanisms involved in the development and maintenance of anxiety, including modeling of avoidance (Bayer et al., 2006; Wei & Kendall, 2014), overinvolvement (Beesdo et al., 2010; Rapee et al., 1997), and accommodation (Norman et al., 2015). By definition, parents are not (or only minimally) involved in independence activities and thus do not have the opportunity to accommodate their child's avoidance during the tasks. Independence activities may not only be more acceptable to children, but also to their parents. Anxious parents may be more willing to allow their children to perform independence activities than exposure exercises because most parents have a positive global opinion of child independence. For example, Suizzo (2007) found that a diverse sample of 343 parents all placed great value on their children's independence. Parents allowing children to engage in independence activities may model approach behaviors and tolerance of distress for children (Silk et al., 2013). This experience may produce corrective learning in *parents'* own cognitions, including that they can tolerate their children functioning without their help or guidance and that children are more resilient than they initially thought. Parents may be willing

to grant permission to their child to perform independence activities as they are relatively safe; a study of 6-12 year-olds in Western cultures demonstrated a rate of 0.15 to 0.17 injuries per 1000 hours of unorganized and unsupervised leisure time with physical activity (Nauta et al., 2015).

Independence activities may also target the concerning rise in parental overinvolvement seen more generally. Intensive mothering ideology, first described by Hays (1996), is prominent among today's mothers and is characterized by time-intensive, strict, and overbearing parenting styles that necessitate the sacrifice of many personal needs in service of the child (Liss et al., 2013). Other research shows that parents spent double the amount of time with their children in 2012 than they did in 1965 (Dotti Sani & Treas, 2016; Ishizuka, 2019). There has been a drastic decline in unstructured, unsupervised activity in childhood, particularly outdoors and around children's neighborhoods (Gray, 2011a; Loebach & Gilliland, 2014; Shaw et al., 2012). Increased parental involvement and reduced unsupervised play may have costs for children, including less independently planned goal-directed behavior and self-controlled executive functioning skills exercises (Barker et al., 2014). Thus, increasing independence through the use of unstructured, unsupervised play or other activities may address these costs.

Importantly, we theorize that independence activities need not be topographically similar to stimuli that produce a fear response in children, as long as they modify underlying transdiagnostic mechanisms involved in the child's anxious response, such as corrective learning about their own ability to handle discomfort. In fact, it is precisely this topographical dissimilarity that may make independence exercises more acceptable to children and their parents. For example, a child with a fear of the dark who is allowed to ride his bike to the park alone or sleep in his backyard in a tent with friends or whittle with a pocket knife may experience a reduction in his fear and avoidance of the dark because of their common

mechanisms, without ever directly exposing him to the dark, and thus without activating perceptions of threat and subsequent avoidance behaviors.

Independence activities may also be more acceptable to *clinicians* than are traditional exposure exercises. Clinicians' discomfort with client distress during exposure activities and concerns about the ethics of the intervention would likely be less relevant to independence activities as children are not subjected to high levels of distress during these tasks and take an active role in choosing the activities. As the activities are enjoyable, informed consent would be easier to obtain, lowering risk and also possibly alleviating fears of litigation (Olatunji et al., 2009). Also, the resilience-building face validity of independence activities would likely be appealing to clinicians (Whiteside et al., 2016). Finally, without direct clinician involvement in independently performed tasks, concerns about complications related to exposure outside of a clinician's office may be diminished (Olatunji et al., 2009).

Independence activities can be defined as developmentally challenging, unstructured tasks that are performed without help from parents. They involve mild risk of discomfort or danger, adventure, maturity, and/or difficulty. These activities can be chosen by the child. If free play is involved, children can interact in groups of various ages, as mixed-age groups provide younger children with more opportunities to learn and older children with opportunities to cultivate leadership skills (Gray, 2011b). Children can carry them out in their own home by completing tasks such as building something, cooking, or sewing. They also can (and should) seek independent outdoor activities, as leaving the home and entering an unfamiliar environment is likely to induce anxious arousal in children. Examples of outdoor IAs include exploring one's neighborhood, climbing a tree, riding a bike, or attending an event. The choice of independence activities may be a fun brainstorming exercise in and of itself that leverages a child's interests.

The use of independence activities in the treatment of child anxiety can be straightforward and brief. In the treatment, few therapy sessions were required and were used to orient children and families to the treatment, explain its rationale, develop motivation and commitment, and problem-solve barriers to implementation. While increasing independence is largely a child-focused intervention, parents are given psychoeducation about its rationale and about the benefits of encouraging their children to carry out tasks autonomously.

Independence-focused treatment could be cheap and transportable. With few sessions, this treatment can be more cost-effective than exposure-based and accommodation-reducing interventions. Further, clinicians are not directly involved in independence activities, whereas most exposure exercises and accommodation-focused sessions are carried out in the presence of a clinician (Reid et al., 2018). As a result, a clinician's office is not needed for independence activities, and they can be performed in various settings, such as schools. Moreover, a lesser degree of training may be required for clinicians to effectively implement independence activities into their practice than is needed for exposure exercises, so more clinicians may opt to use them (Olatunji et al., 2009). Thus, independence-focused treatment can be accessible and widely disseminated.

One type of brief, transportable, cost-effective, and acceptable independence activity is risky play. Risky play allows children to face anxiety-provoking stimuli and build adaptive coping, confidence, skills, and independence. Dodd et al. (2021) proposed a conceptual model wherein they hypothesized that adventurous play in physical and social environments conducive to fear-provoking situations may lessen anxiety symptoms in children by improving coping abilities, decreasing intolerance of uncertainty, and creating accurate interpretations of physiological arousal. Children naturally develop fears as an evolutionary function so that they

avoid dangerous situations, and as they mature, risky play may have “anti-phobic” effects in that it may create new, positive associations with previously feared stimuli (Sandseter & Kennair, 2011). Risky play can provide a sense of exhilaration and thrill that empowers children to overcome their fears as they simultaneously test their physical capabilities and improve their self-perceptions of their physical and mental strength (Gray, 2011a). Dodd’s (2021) conceptual model addresses how risky play can lessen general anxiety with not only exposure but also by building adaptive coping skills, tolerance of uncertainty, and accurate interpretations of physiological arousal. Thus, risky play is an independence activity that may result in a generalized reduction in anxiety rather than just a reduction in anxiety about risky play, underscoring the idea that independence activities may be effective without exposing children to the specific content of their anxiety.

The present study aimed to assess independence as a putative mechanism of behavior change, consistent with stage 1 the Science of Behavior Change (SOBC) research paradigm suggested by the National Institutes of Health (NIH) (Nielsen et al., 2018). Traditionally, research on potential mechanisms of change and research on the efficacy of interventions have been conducted disjointedly (Riddle et al., 2015). The NIH proposed a four-stage experimental medicine format for research geared toward developing and testing new behavioral interventions, in which 1) hypothesized mechanisms of behavior change are identified; 2) reliable measures to assess the degree to which the mechanisms are engaged by interventions are developed; 3) experiments meant to engage the mechanism are conducted, and 4) the degree to which behavior change is produced by influencing the mechanism is evaluated. In following this model, the process of behavior change may be better understood, and implications from research may be more broadly applied to other behaviors in different contexts (Nielsen et al., 2018; Riddle et al.,

2015). Here, we hypothesize that independence is a mechanism that drives approach behaviors in children. We aim to provide empirical evidence to show that increasing independence may be a mechanism worth exploring, and findings from this study may be used to inform the development of measures that reliably assess the construct of independence (stage 2) so that its level of engagement by future interventions may be assessed.

Research is needed on a novel independence-focused treatment that targets childhood anxiety and parental modeling of anxious behavior, overinvolvement, and accommodation in a cost-effective and accessible manner (Gray et al., 2023). No published data have examined the effects of independence-focused activities on clinically significant anxiety symptoms in children.

The Current Study

The current study utilized a nonconcurrent multiple baseline across-individuals design to evaluate the effects of a child-focused independence intervention. We hypothesized that an independence intervention would result in positive changes on five categories of variables: 1) gradual improvement in child and parent behavioral mechanisms involved in the maintenance of child anxiety (avoidance of anxiety-inducing stimuli, parental involvement, and parental accommodation), 2) gradual reduction in measures of child anxiety, 3) gradual improvement in the child's and parents' beliefs about the child's independence, 4) improvement in child and parent cognitive mechanisms of child anxiety, and 5) improvement in untargeted secondary outcomes (parent-child relationship satisfaction, child social satisfaction, child happiness).

Method

Participants

Four families with 3rd-8th grade children were solicited through Long Island- and New York City-based psychotherapy practices as well as psychology listservs. This age range was

chosen to span middle childhood through early adolescence, as the estimated mean age of onset for several anxiety disorders occurs within this range, such as separation anxiety disorder (10.6 years), specific phobia (11.0 years), and social phobia (14.3 years) (Lijster et al., 2017). To participate, parents must have indicated the presence of significant anxiety in their child, and the child must have scored in the clinical range on the Youth Anxiety Measure for DSM-5, Part I. Exclusion criteria for participation were a) past diagnosis of Autism Spectrum Disorder, b) a history of significant noncompliance, c) current acute psychotic symptoms, and d) current suicidal or homicidal ideation. These exclusion criteria were chosen as these comorbidities each contraindicate a reduction in parental supervision and may have reduced overall safety of the child when completing IAs.

Family 1 included a 13-year-old white boy, domiciled with his 44-year-old mother, 44-year-old father, and 10-year-old brother. They were of high socioeconomic status. The mother reported the child experienced significant health anxiety, assuming the worst case scenario upon noticing benign physiological sensations such as headaches and an increased heart rate. The mother often accommodated this anxiety, including bringing him to a neurologist after he experienced a headache. She described him as “generally fearful.” She reported he is able to be away from his parents for significant periods of time, but that she felt she was too “coddling” and too “overprotective.”

Family 2 included a 9-year-old white girl, domiciled with her 35-year old mother, 38-year-old father, 4-year-old brother, and 9-month-old sister. The parents were of medium socioeconomic status. The mother reported the child experienced significant separation anxiety that led to fear related to any activity in the absence of a parent. She avoided going upstairs in their house by herself and experienced night terrors, leading her to sleep in her parents’ room

every night. She also expressed severe anxiety related to attending school. Physically, she experienced frequent shaking, stomach issues, nail-biting, and crying. The mother described her schedule as “very busy” with three children and a full time job, and so the child’s refusal to separate from her caused significant stress on the family.

Family 3 included an 11-year-old biracial Asian and white girl, domiciled with her 46-year-old mother, 57-year-old father, and 8-year-old brother. The parents were of high socioeconomic status. They required remote accommodation for the psychotherapy sessions because they lived in a different state. The mother reported the child experienced excessive worry and extensive avoidance of everyday activities out of the home that led to somatic symptoms of anxiety such as shaking and abdominal pain. She was mainly worried about being judged, often expressing fear of others expressing disappointment in her and of feeling embarrassed. This resulted in avoidance of participating in class. The child reported experiencing social anxiety and was thus less responsive to positive attention during the sessions, which may help explain her desire to drop out of treatment before completion.

Family 4 included a 10-year-old white Latino boy, domiciled with his 54-year-old mother and 61-year-old father. The parents were of high socioeconomic status. The child was naturally cautious and fearful of new experiences and exhibited significant separation anxiety. The mother reported that it was difficult for her to go anywhere without him, and that she experienced social anxiety herself which was often modeled for the child. She also reported feeling anxious to let her child do things on his own, and that she did not allow him to walk home from school in what she described as a “quiet town.” They had attempted independence exercises with their child previously, including asking him to walk into a pizza restaurant and order a slice for himself, but

this involved extensive discussion and preparation each time. The child was diagnosed with an unspecified learning disorder at age 6, but was at the same level as his age peers academically.

Measures

Daily

Child anxiety. The Youth Anxiety Measure for DSM-5, Part I (YAM-5-I; Muris et al., 2017) is a 28-item self- and parent-report measure designed to assess symptomatology of the major child anxiety disorders included in the DSM-5 (separation anxiety disorder, selective mutism, social anxiety disorder, panic disorder, generalized anxiety disorder, etc.). Items are rated from 0 (never) to 3 (always). The YAM-5-I and its subscales have demonstrated strong reliability ($\alpha = 0.93$ in a non-clinical sample and $\alpha = 0.92$ in a clinical sample), strong internal consistency with the exception of the selective mutism subscale, and satisfactory parent-child agreement. The convergent and divergent validity of the scale are also supported by psychometric research. Questions from the YAM-5-I were adapted into daily items. The following items were adapted:

- I worry about a lot of things (5) was adapted to: I worried about a lot of things today.
- I think a lot about what can go wrong (9) was adapted to: I thought a lot about what could go wrong today.
- I am afraid to go anywhere without my parents (1) was adapted to: I was afraid to do something without my parents today.

Additionally, one item was added to assess child loneliness on a daily basis:

- I felt lonely today.

These four items were summed into one Anxiety Score.

Child independence. On a nightly basis, the child was asked to rate the following question on a 7-point Likert scale from 0 (Not Confident at All) to 7 (Extremely Confident): “How confident are you that you can do things on your own without your parents help?”

Child perceptions of resilience. On a nightly basis, the child was asked to rate the following question on a 7-point Likert scale from 0 (Not Confident at All) to 7 (Extremely Confident): “How confident are you that you can handle situations where something goes wrong?”

Parent-child relationship satisfaction. On a nightly basis, the child was asked to rate the following question on a 7-point Likert scale from 0 (Not Good at All) to 7 (Extremely Good): “How good is your relationship with your parents?”

Parental accommodation. On a nightly basis, the parents were asked to rate the following question on a 7-point Likert scale from 0 (Not at All) to 7 (Every Time they Were Anxious): “How much did you intervene to reduce your child's anxiety today?”

Parent perceptions of child independence. On a nightly basis, the parents were asked to rate the following question on a 7-point Likert scale from 0 (Not Confident at All) to 7 (Extremely Confident): “How confident do you feel in your child's ability to do things on their own?”

Weekly

Children were asked to complete the 6 items on the separation anxiety disorder subscale and the 6 items on the generalized anxiety disorder subscale of the YAM-5-I on a weekly basis.

Pretest & Posttest

Child avoidance. The Child Avoidance Measure-Self Report (CAMS) and the Child Avoidance Measure-Parent Report (CAMP; Whiteside et al., 2013) each contain 8 items related to avoidance behaviors in children that contribute to the development and maintenance of anxiety disorders. Items are rated from 0 (almost never) to 3 (almost always), with higher scores

indicating greater anxious avoidance. Both scales have high internal validity (CAMS Cronbach's $\alpha = .88$; CAMP Cronbach's $\alpha = .91$) and adequate external validity. The CAMP demonstrates higher criterion validity than the CAMS, but both scales were supported for use in clinical research.

Parental accommodation. The Family Accommodation Scale – Anxiety (FASA; Lebowitz et al., 2013) assesses the degree of accommodation of children's anxious avoidance. The FASA consists of 9 items that are rated from 0 (*Never*) to 4 (*Daily*) that ask parents about their participation in their child's anxious behavior and about modifications of their own behavior due to their child's anxiety over the previous month. It also contains 4 items that are rated from 0 (*No*) to 4 (*Extreme*) that assess the level of severity of the distress and consequences resulting from accommodations. The internal consistency of FASA is high (Cronbach's $\alpha = .90-0.91$), and convergent and divergent validity were both sound when assessed.

Child perceptions of self-efficacy. The Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001) is a 24-item measure designed to assess a child's perceived self-efficacy in social, academic, and emotional domains. Each item is rated on a 5-point Likert scale from 1 (not at all) to 5 (very well). This measure has been shown to have strong internal consistency (Cronbach's $\alpha = .88$). Scores on the SEQ-C have been shown to correlate negatively with anxiety disorders and related symptoms (Muris, 2002). The children were asked to complete the 16 items of the social self-efficacy and emotional self-efficacy subscales of this measure at pretest and posttest.

Parent tolerance of risk. To assess parents' tolerance of their child performing risky activities, they were each asked to fill out the Tolerance of Risk in Play Scale (TRiPS; Hill & Bundy, 2012) at pretest and posttest. The TRiPS is a 32-item self-report instrument designed to measure parents' tolerance of six categories of risky play (dangerous elements, great heights, rough and

tumble, disappear/get lost, high speed, and dangerous tools). 31 items begin with ‘Would you allow your child to...’ and are yes/no questions. ‘Yes’ answers are weighted from 1 to 12 based on their degree of difficulty. Item one is answered on a visual analogue scale (‘How much do you encourage the child to take everyday risks?’). Given the restrictions of the electronic delivery method of measures employed in this study, item one was removed. TRiPS scores demonstrate satisfactory internal validity, external validity and internal reliability.

Child social satisfaction. Children were asked to complete the Children’s Loneliness and Social Dissatisfaction Scale to evaluate their level of social satisfaction at pretest and posttest (CLSDS; Asher et al., 1984). This scale consists of 16 items related to children’s social isolation and social functioning, each of which is rated on a 5-point likert scale. Eight “filler” items about general hobbies are also included to help children feel more comfortable and open. The 16 primary items were found to be internally consistent (Cronbach’s $\alpha = .90$) and internally reliable (split-half correlation between forms = .83; Spearman-Brown reliability coefficient = .91; Guttman split-half reliability coefficient = .91).

Child happiness. The Subjective Happiness Scale (SHS; Lyubomirsky and Lepper, 1999) is a 4-item self-report measure that uses a 7-point Likert scale to rate items from 1 (less happy) to 7 (more happy). In adults, this scale demonstrates strong internal consistency (Cronbach’s $\alpha = .79$ to .94) and strong test-retest reliability ($r = .90$ after 1 month). Evidence also supports convergent and divergent validity. To adapt this measure for children aged 8-12, questions 3 and 4 were changed from “To what extent does this characterization describe you?” to “How much does this sentence describe you?” (Holder et al., 2010).

Procedure

Design

This study employed a nonconcurrent multiple baseline design to examine the effects of independence activities on childhood anxiety. This design outlined by Watson & Workman (1981) is useful in testing causality in that it involves comparing baseline measurements of dependent variables with measurements of the same variables after the introduction of an intervention for multiple subjects. The nonconcurrent implementation of treatment across subjects allows changes in the dependent variables to be attributed to the intervention rather than coincidental events (i.e., history), since changes coincide with staggered treatment implementation. The nonconcurrent design also allows for greater flexibility in applied research and is recommended for educational settings (Watson & Workman, 1981).

To begin, participants were screened for clinical levels of anxiety using the YAM-5-I. Their scores were compared to mean scores for children with clinical anxiety obtained by Muris et al. (2017). Next, the exclusion criteria were assessed and a short background interview was conducted. If they met all criteria and were deemed a good fit for the study, they were given a chance to ask questions about the study, and informed consent and child assent were obtained. After the initial screening phone call, they were sent a packet that included a demographic questionnaire and pretest measures (CAMS, CAMP, FASA, SEQ-C, TRiPS, CLSDS, & SHS). Upon availability, participants were then randomly assigned to baseline lengths of 5, 10, 15 and 20 days using a random number generator (Urbaniak & Plous, 2013). They were asked to complete the daily measures each day and the weekly measures once per week beginning from the first day of baseline measurements.

The parents and anxious children began psychotherapy sessions led by a licensed clinical psychologist (Camilo Ortiz, Ph.D.) upon completion of the baseline phases. The intervention was designed to be carried out over 5 sessions (with an optional 6th). Three families completed the

full intervention, while one family dropped out prematurely. Independence activities were implemented daily after the second session and continued through the final session of treatment. Daily and weekly measures were collected up until the final session. After the final session, the families were sent a packet that included the posttest measures (CAMS, CAMP, FASA, SEQ-C, TRiPS, CLSDS, & SHS). The procedure was carried out asynchronously across the participants.

Intervention

The first session was a 60-minute parents-only session focused on psychoeducation about the value of independence for kids. The therapist assessed avoidance behaviors of the child as well as the degree of parental involvement. He discussed the prevailing conceptualization of the development and maintenance of anxiety with the child and their parents and provided data on the increase in rates of child and adolescent anxiety over the past decade. He also showed a 10-minute documentary ([YouTube Off The Rails | A Documentary On Parenting in the Age of Fear | ...](#)) about the benefits of childhood independence and societal perspectives on acceptable risk. Independence activities were then introduced as a treatment for child anxiety. Let Grow, an organization whose mission is to decrease overparenting and increase independence in kids, was also introduced and ideas for independence activities from their school and community programs were shared. Finally, the therapist described independence activities more generally, emphasized their enjoyable nature, and secured motivation and commitment to treatment.

The second session was 60 minutes long with both parents and the child and entailed planning independence activities. The therapist showed the family a video from Let Grow ([YouTube Learn How the Let Grow Project Can Help Kids with Anxiety](#)) that included ideas for independence activities and then asked the child to brainstorm as many fun activities that do not involve their parents as they could think of. With the help of the parents, the list was narrowed

down, with at least one outdoor activity, one indoor activity, one activity with at least one friend, one prolonged activity, and one challenging activity. At least one independence activity was scheduled for a specific time for each day of the treatment phase after this session. The therapist asked both the child and parents about their predictions and expectations for the success of these activities.

The third session and fourth session were each 45-minutes long and consisted of continued brainstorming and problem-solving around barriers to the implementation of independence activities. Parents learned about the potential adverse effects of parental overinvolvement, modeling of anxious avoidance, and interference with their child's independence activities. The children learned about the negative effects of reassurance seeking and giving up when activities become difficult or risky. Obstacles to the success of independence activities were identified and resolved.

The fifth session was 45-minutes long and served as a booster session to remind parents and children of the rationale of independence activities and to problem-solve any issues that arose since the previous session. Thoughts and feelings about the treatment as well as strategies to maintain gains after treatment were also discussed. The optional sixth session was not deemed necessary for the purposes of this study, but would have addressed the same topics as session 5 if more time were needed.

Data analysis

For each participant, the data collected from daily measures were first examined with within-phase and between-phase visual inspection. To improve stability in the trendlines of daily data for simpler visual inspection, 3-day, 5-day, and 7-day moving averages were calculated. The

data points were converted into averages that “move;” that is, each consecutive average excludes the first data point used in the previous average and includes the next data point in the series.

Next, the effectiveness of the intervention was assessed by measuring the overlap of data points between the baseline phases and intervention phases using the improvement rate difference (IRD), consistent with recommendations (Parker et al., 2009; Wolfe et al., 2019). This involved subtracting the improvement rate in data collected during the baseline phase from the improvement rate in data collected during the treatment phase. The IRDs were then averaged across each participant for each construct measured daily to determine IRDs for the entire design. IRDs were calculated for the raw data, as well as the 3-, 5-, and 7-day moving averages.

Data collected from the weekly measures were summed to create single scores for each week consisting of responses on the generalized anxiety disorder and separation anxiety disorder subscales of the YAM-5. This data was analyzed using between-phase and within-phase visual inspection. Finally, scores for each pretest and posttest measure were compared in a table and the magnitude of change for each was assessed.

Results

Treatment began for all families in accordance with their randomly assigned baseline conditions. Generally, baseline scores were stable, which is consistent with parent reports of long term stability of anxious symptoms in all cases. Figure 1 shows the 3-, 5-, and 7-day anxiety score moving averages for each family. Visual inspection reveals that in all cases, transition from baseline phase to treatment phase was associated with improvement in mean anxiety symptoms. The child in family 2 reported an increase in anxiety in the baseline phase but demonstrated a steady decline in anxiety immediately after beginning IAs in the treatment phase. The children in families 1, 2, and 3 experienced an increase in anxiety symptoms in the final days of treatment.

The child in family 1 reported anxiety symptoms more severe than at any point during baseline measurements midway through treatment, but reported a reduction in anxiety symptoms overall as treatment progressed. The 3-day moving average IRD in the anxiety score for each family is listed in Table 1. The IRD for family 1 was 0.15, while the mean across the other three families was 0.59. The mean across all four families was 0.48, indicating a moderate overall effect.

Small to large improvements in child self-efficacy occurred during the treatment phase. This was measured by child responses to the question, *‘How confident are you that you can do things on your own without your parents’ help?’* Figure 2 shows the 3-, 5-, and 7-day moving averages for these responses. The child in family 4 reported a large increase in their confidence in their ability to act independently, with a 3-day moving average IRD of 0.89. The children in families 1, 2, and 3 demonstrated slightly greater confidence throughout the intervention. Table 1 shows the 3-day moving average IRDs for each family, with a mean across the four families of 0.52. This indicates a moderate overall effect.

Responses to the question *‘How confident are you that you can handle situations where something goes wrong?’* were analyzed to determine changes in the children’s self-perceived resilience. Table 1 shows the 3-day moving average IRDs for each family, with a mean of 0.37, which is a small overall effect. Figure 3 displays the 3-, 5-, and 7-day moving averages for child responses to this question and illustrates considerable variability across the families for this effect. The children in families 1 and 3 demonstrated large increases in their self-perceived resilience after several weeks of independence practice. The children in families 2 and 4 demonstrated slight increases in their self-perceived resilience throughout the treatment phase as compared to the baseline.

Figure 4 displays the 3-, 5- and 7-day moving averages for child responses on the question, '*How good is your relationship with your parents?*' Children in families 2, 3, and 4 all reported a very strong relationship with their parents throughout the baseline and treatment phases. The child in family 1 reported a moderately strong relationship with their parents, demonstrating a slight improvement in the treatment phase up until a small decline in the final days of the intervention (3-day moving average IRD = 0.67). Table 1 shows the 3-day moving average IRDs, with a mean of 0.29 indicating a small overall effect.

Parental responses to daily measures indicated large changes in their behavior and beliefs in the treatment phase compared to the baseline phase. Parental accommodation of their children's anxiety before and during treatment was assessed by the question, '*How much did you intervene to reduce your child's anxiety today?*' Figure 5 shows the 3-, 5-, and 7-day moving averages for parent responses to this question. Parents in family 3 demonstrated a steady reduction in their accommodations during the baseline phase that remained stable during treatment. Parents in families 2 and 4 reported large reductions in their accommodations of their children's anxiety in the intervention phase compared to baseline means. Parents in family 1 demonstrated an increase in accommodations as they approached completion of the intervention after reducing their accommodations earlier in treatment. The 3-day moving average IRDs are reported in Table 2, with a mean of 0.45 indicating a moderate overall effect.

Parents generally believed in their children's abilities to act independently with high confidence in both the baseline and treatment phases. This was assessed by the question, '*How confident do you feel in your child's ability to do things on their own?*' The 3-day moving average IRDs for this question are listed in Table 2, with a mean of 0.30 indicating a small overall effect. The parents in families 1, 2, and 3 all demonstrated stable confidence through the

baseline and treatment phases. The parents in family 1 were unique in that they reported low to moderate confidence throughout their participation in the study. The parents in families 2 and 3 reported feeling the highest possible confidence in their child's ability to act independently throughout the entire study apart from day 17 for family 3. The parents in family 4 reported a large increase in their confidence as the intervention progressed that peaked close to the end of treatment. The 3-day moving average IRD for family 4 was 0.76.

Figure 1
Anxiety Score

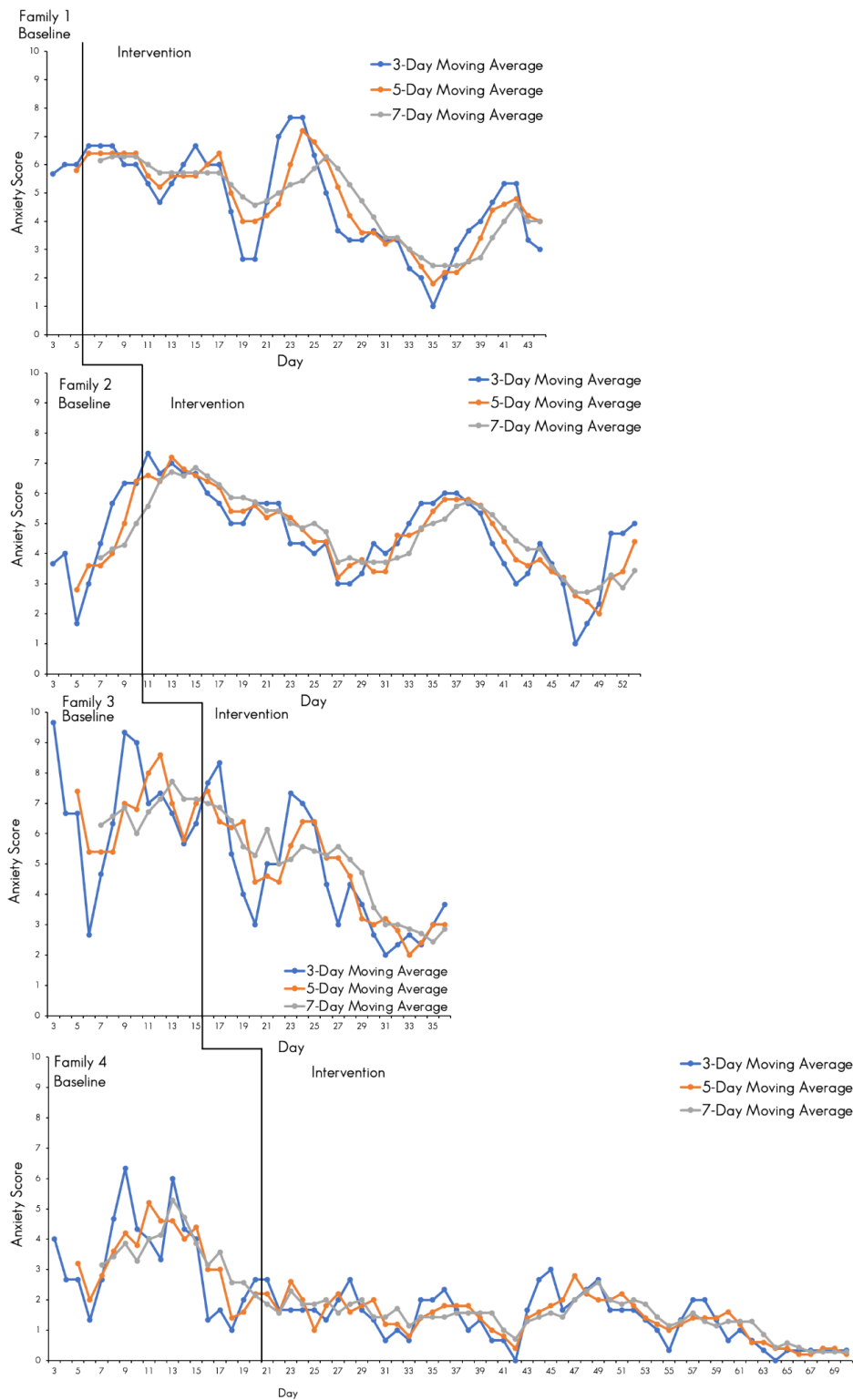


Figure 2

How confident are you that you can do things on your own without your parents' help?

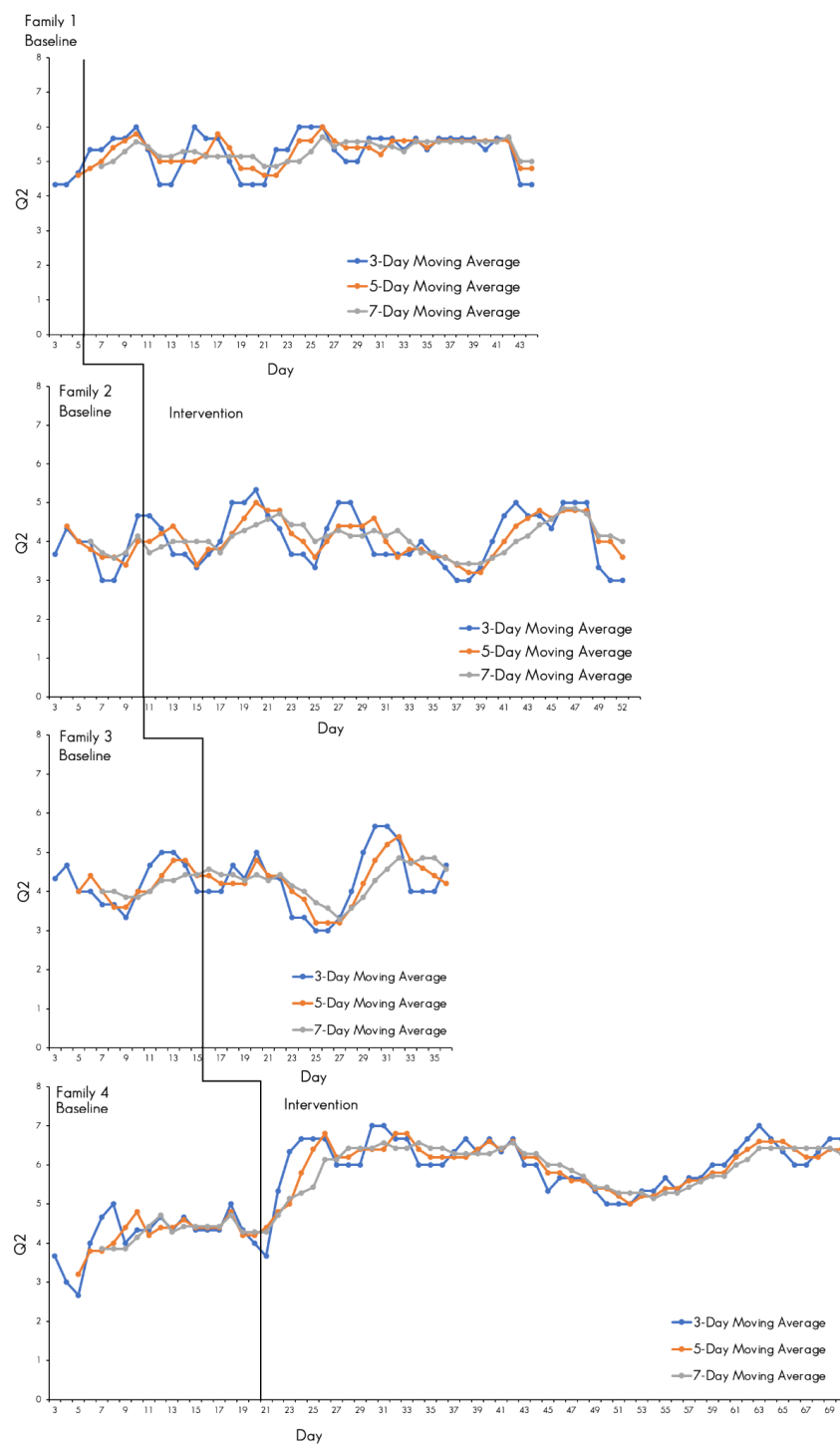


Figure 3

How confident are you that you can handle situations where something goes wrong?

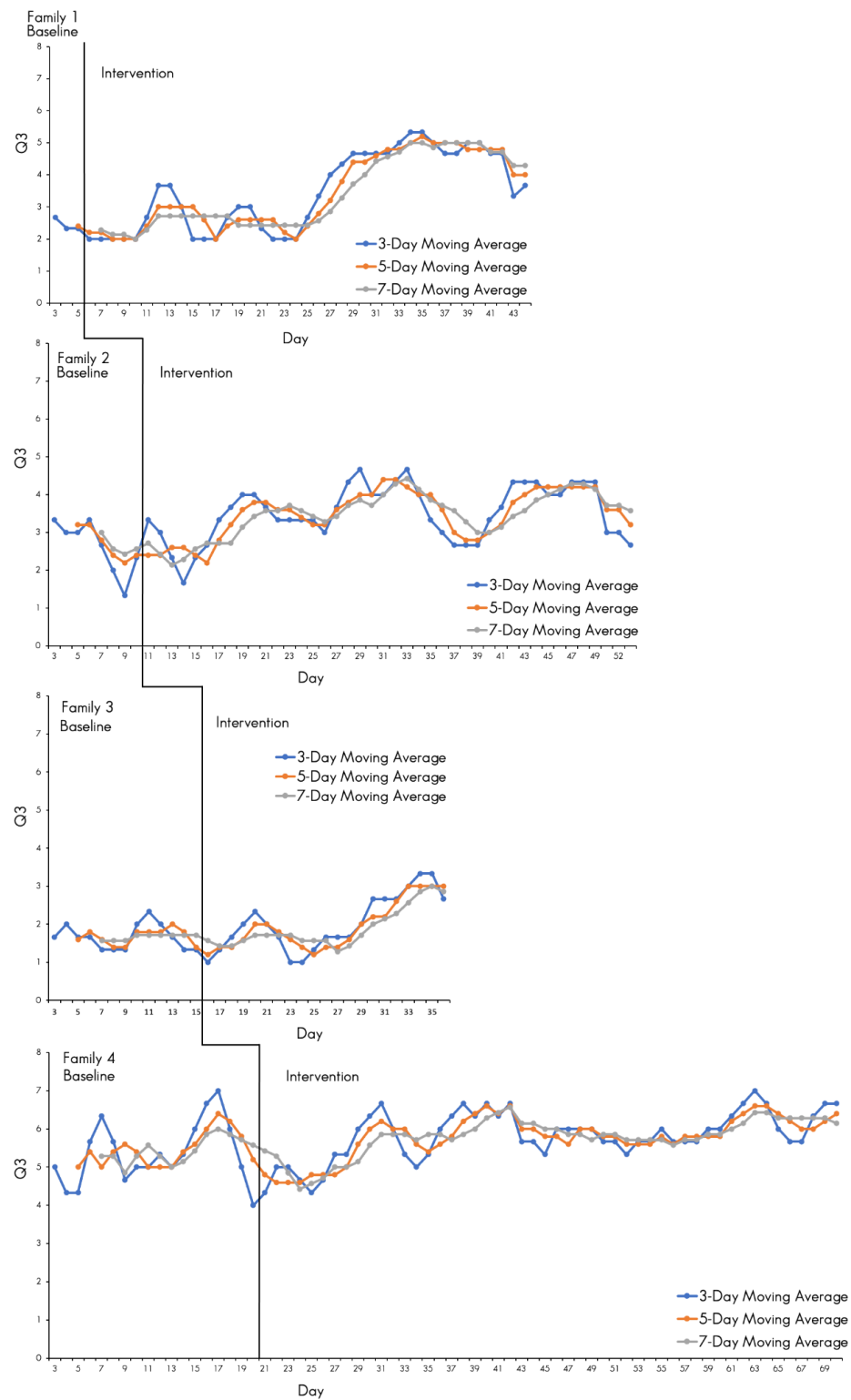


Figure 4

How good is your relationship with your parents?

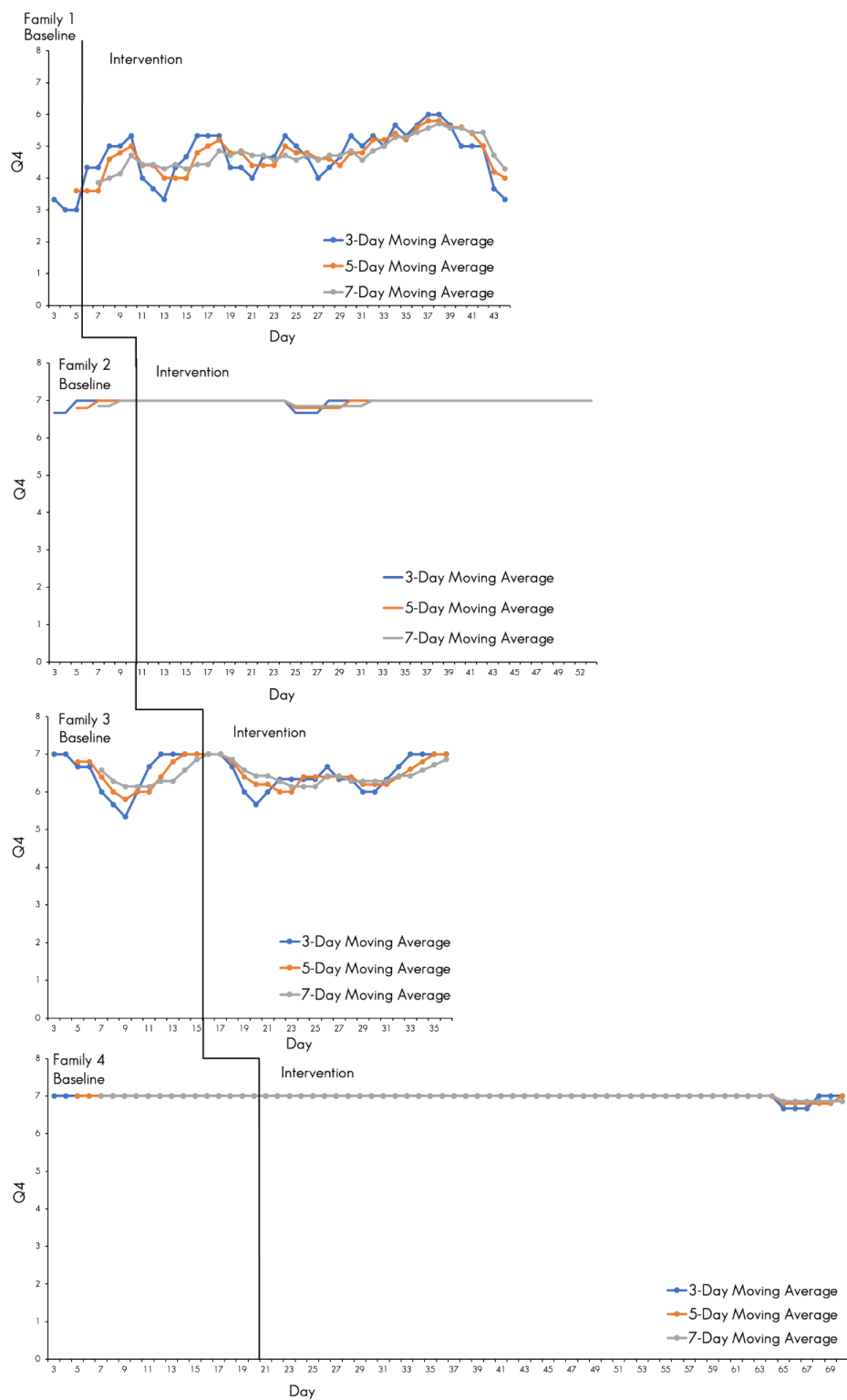


Figure 5

How much did you intervene to reduce your child's anxiety today?

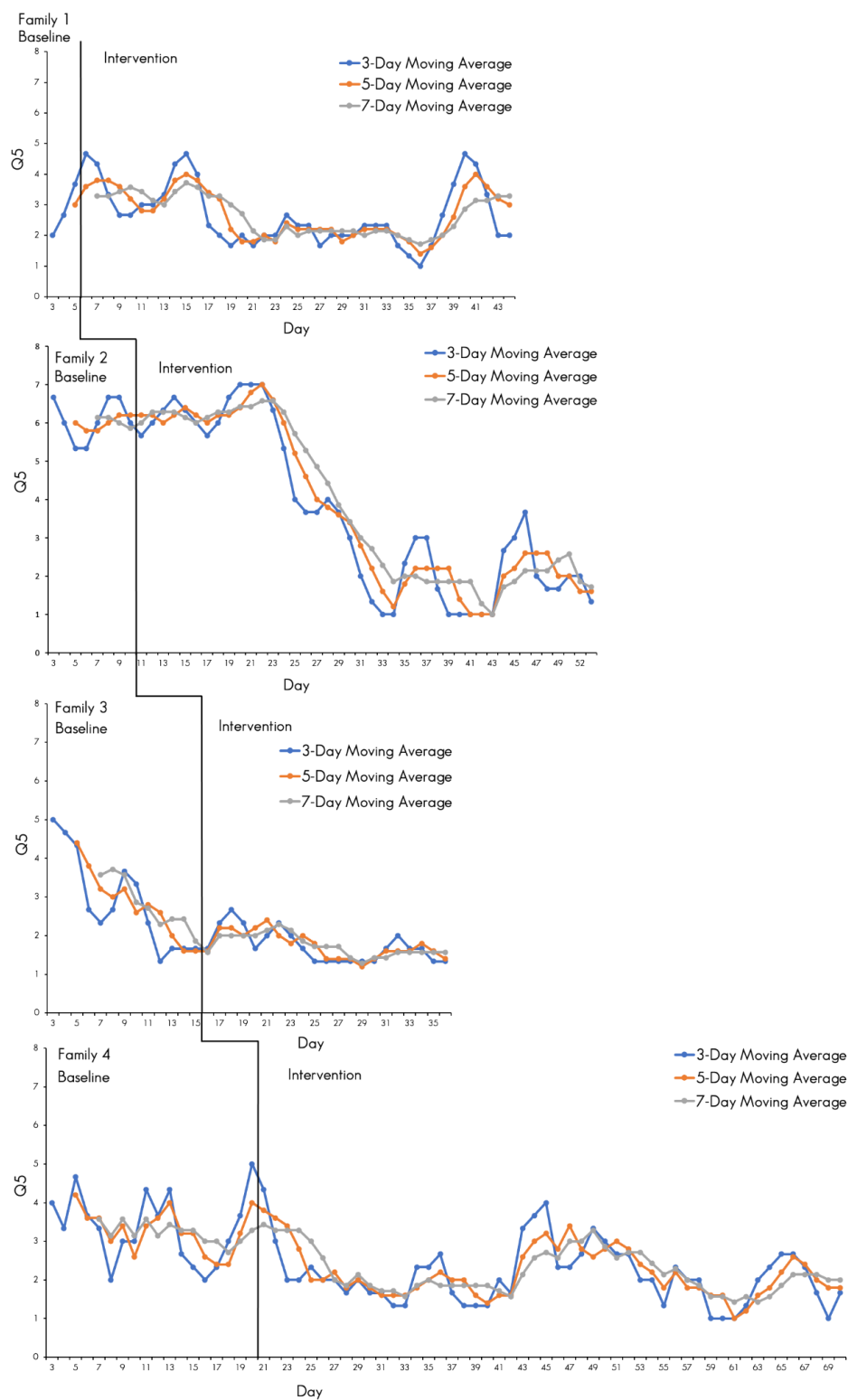


Figure 6

How confident do you feel in your child's ability to do things on their own?

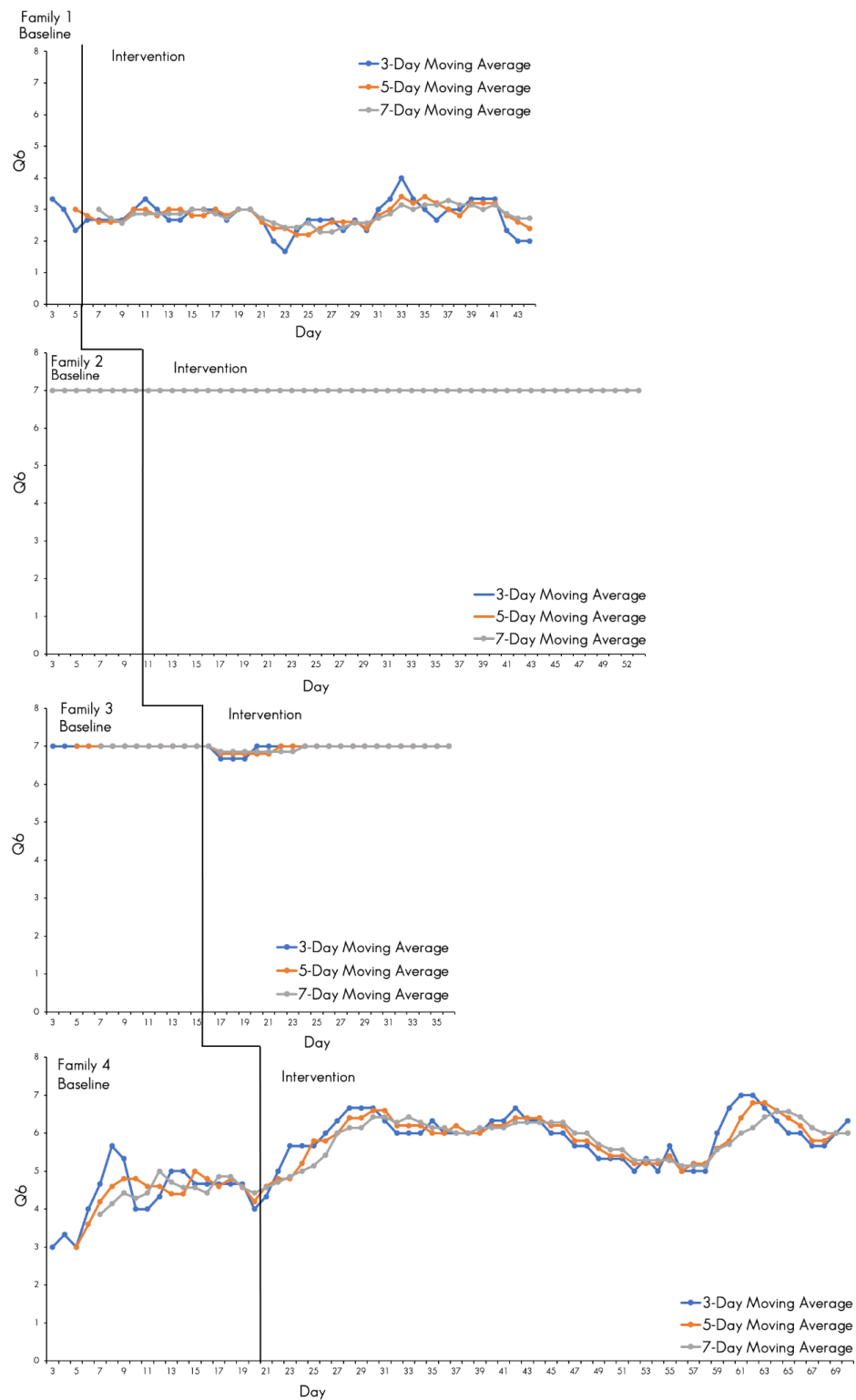


Table 1*Improvement Rate Differences in 3-Day Average Scores for Child-Reported Questions*

Family	Q1	Q2	Q3	Q4
1	0.67	0.82	0.36	0.67
2	0.15	0.22	0.44	0.17
3	0.60	0.16	0.33	0.26
4	0.50	0.89	0.35	0.06
Mean	0.48	0.52	0.37	0.29

Note. Q1 refers to Anxiety Score. Q2 refers to ‘How confident are you that you can do things on your own without your parents’ help?’ Q3 refers to ‘How confident are you that you can handle situations where something goes wrong?’ Q4 refers to ‘How good is your relationship with your parents?’

Table 2*Improvement Rate Differences in 3-Day Average Scores for Parent-Reported Questions*

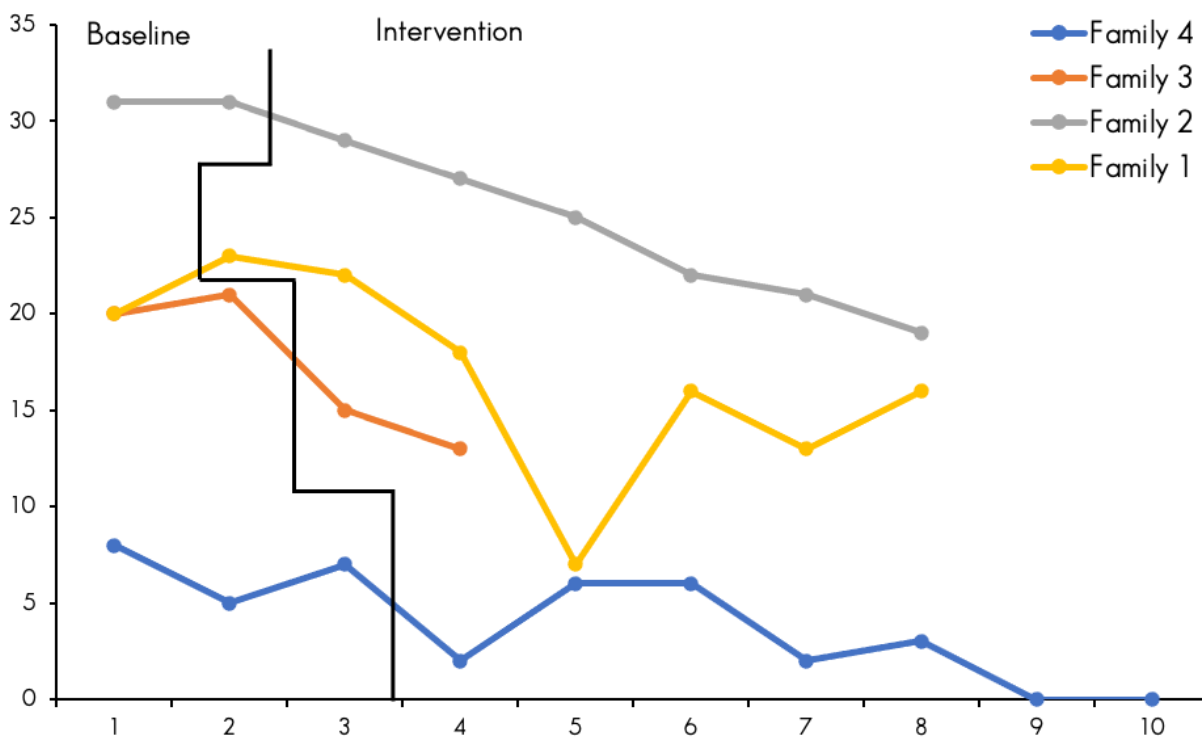
Family	Q5	Q6
1	0.23	0.21
2	0.49	0.10
3	0.49	0.14
4	0.58	0.76
Mean	0.45	0.30

Note. Q5 refers to ‘How much did you intervene to reduce your child's anxiety today?’ Q6 refers to ‘How confident do you feel in your child's ability to do things on their own?’

In all cases, the intervention resulted in lower scores on measures of generalized anxiety and separation anxiety in the child. The results of the weekly measure are displayed in Figure 7. Family 4 reported an absence of anxiety symptoms in the final two weeks of treatment. Families 2 and 3 reported a steady reduction in anxiety symptoms throughout the treatment phase. Family 1 reported an increase in anxiety symptoms towards the end of treatment; however, this rise remained below the child’s baseline levels of anxiety.

Figure 7

Youth Anxiety Measure for DSM-5: Weekly Sum of Generalized Anxiety Disorder and Separation Anxiety Disorder Subscales



Note. The baseline lengths for the families are delineated by the moving black line.

Family 3 dropped out of treatment after two sessions, citing the child's lack of interest in participating. As a result, posttest data was not provided. Additionally, the researchers were unable to contact family 2 post treatment despite several attempts, so posttest data was not collected. The pretest and posttest data for families 1 and 4 are reported in Table 3. The parents and child in family 1 reported a large decrease in the child's anxious avoidance based on CAMP and CAMS measurements. The parents in family 4 reported a slight decrease in the child's anxious avoidance, while the child reported no overall change. Family 1 reported a small decrease in parental accommodation of the child's anxious avoidance across all three FASA subscales; family 4 reported a slight increase in parental accommodation of the child's anxious

avoidance across the same scales. The parents in family 1 demonstrated a large increase in their tolerance of risky play behaviors at posttest as measured by the TRiPS, while the parents in family 4 demonstrated a slight increase. The child in family 1 indicated a large decrease in their self-perceived social self-efficacy and a smaller decrease in their self-perceived emotional efficacy; the child in family 4 indicated a slight increase in both of these constructs. The child in family 1 reported lower overall loneliness and social dissatisfaction at posttest, while the child in family 4 reported they felt slightly more lonely and socially dissatisfied. Finally, the child in family 1 reported no change in their subjective level of happiness, while the child in family 4 reported feeling moderately happier.

Table 3*Pretest and Posttest Measure Comparisons*

Family	CAMP	CAMS	FASA			TRiPS	SEQ-C		CLSDS	SHS
			Participation Modifications	Distress and Consequences	Social Self-Efficacy		Emotional Self-Efficacy			
1-Pretest	12	16	14	14	10	73	32	17	45	16
1-Posttest	6	8	11	9	6	116	8	8	57	16
4-Pretest	18	20	8	6	9	126	32	26	78	19
4-Posttest	16	20	11	7	10	131	33	27	76	24

Discussion

The purpose of the current study was to evaluate the effectiveness of a novel, child-directed, independence-focused treatment for child anxiety. This intervention was developed in response to the purported relationship between time-intensive, involved parenting and rising rates of anxiety in children (Bitsko et al., 2018, Dotti Sani & Treas, 2016; Ishizuka, 2019; Twenge et al., 2021). Moreover, this independence-focused intervention was designed to address several common drawbacks of other CBT for child anxiety-based approaches, including

low treatment acceptability, low access to treatment, and high cost (Collins et al., 2004; Feeny et al., 2003; Lin et al., 2016).

The results of the study provide preliminary evidence for the efficacy of independence-focused treatment. Each family included in the study reported pre-treatment long term stability of clinical levels of child anxiety, yet a decrease in child anxiety symptoms was observed in all participants after a few weeks of independence practice. Additionally, children reported increases in self-efficacy and resilience, and parents reported increases in confidence in their child and reductions in accommodations of their child's anxiety. These findings suggest independence is a transdiagnostic mechanism of child anxiety.

Independence-focused treatment's moderate effect size at reducing anxiety symptoms in children is comparable to that of exposure- and parental accommodation-based CBT for anxiety disorders (e.g., Carpenter et al., 2018; Lebowitz et al., 2014). This effect size was achieved in 5 independence-focused treatment sessions compared to 12 sessions for SPACE and about 10 sessions for exposure therapy (Kaczurkin & Foa, 2015; Lebowitz et al., 2014). Treatment acceptability remained high for three of the children throughout the entire study, and the families did not endorse negative beliefs common to exposure therapy such as it being harmful or insensitive (Feeny et al., 2003). In fact, the children responded positively to choosing IAs and reported enjoying carrying them out.

The children reported reductions in anxiety symptoms despite the fact that the IAs they engaged in were not topographically similar to the content of their fears. This is perhaps the most important feature of independence-focused treatment. Independence activities do not seem to trigger avoidance and fear in the same way that topographically-matched exposure activities do, despite appearing to target anxiogenic cognitive and behavioral mechanisms. This feature

appears to be responsible for the high degree of motivation exhibited by the children to continue to engage in independence activities. Of note, the child in family 3 lost interest in continuing IAs as they increased in difficulty and dropped out of the study, but she specifically reported feeling less anxiety and exhibited less avoidance and greater independence in her final session. Her parents also reported she was “over the hump.” She requested to stay home alone for 4 hours, went into a restaurant to ask for a table menu, babysat 3 kids, and organized an online art auction.

In addition to reductions in self-reported anxiety, the children reported increased confidence to act independently and to overcome challenges. This change was further evidenced by their willingness and enthusiasm to attempt more challenging IAs as they gained experience. Ideas for IAs that the children came up with during the final session included taking a train to another state, volunteering, playing chess in the park with strangers, and doing construction. When asked what she learned, one child stated, “that I’m capable and I can figure it out.” During the last week of treatment, the child in family 2 slept in her bed for four nights of the week after having never made it through a night previously. This was done unprompted by parents.

Parents' reports of confidence in their child’s ability to act independently remained high for families 2 and 3 and steadily climbed to high levels for family 4. These parents shared a clear understanding of the value of independence and were highly engaged when discussing their own independent experiences as children. One session appeared to be adequate to build motivation and commitment to treatment. On the other hand, parents in family 1 were moderately confident in their child’s ability to be independent and this did not change. Both parents reported skepticism about the child’s ability to handle IAs. Interestingly, the father expressed a strong willingness to allow his child to do IAs *despite* his belief that his child would likely not be

successful. The parents in family 1 also reported a large increase in their tolerance of risky play behavior at posttest measurements. This increase is exemplified by the change in their willingness to allow the child to play on slippery rocks close to water or to keep playing if there was potential to break a bone.

Several effect sizes were found to be small. The overall effect for '*how good is your relationship with your parents?*' was small, indicating little improvement but ultimately an absence of harm to the parent-child relationship. The children were generally quite happy to attempt these activities and little persuasion or motivation was required from parents. In addition, effect sizes for self-perceived resilience were small despite sharp increases towards the end of treatment in multiple families. This is because the IRD calculation considers the entire treatment phase as a whole and *most* data points in the treatment phase were not improved. The sharp rises in self-perceived resilience as the children got closer to the end of treatment may be explained by the increase in difficulty of IAs and thus the increased likelihood of experiencing challenges and failures and they represent an appreciable change from perceptions at baseline.

While one family exhibited a large decrease in their accommodations of their child's anxiety, the other three did not have a clear change, and family 1 saw a sharp rise in accommodations close to the end of treatment (coinciding with a rise in the child's anxiety). However, their responses on the FASA indicated they reduced their accommodations across all domains measured. This study's aim was not to change overall parenting practices; a central distinction between independence-focused treatment and SPACE was to keep the focus on the child (Lebowitz et al., 2014). The adverse impacts of parents intervening to reduce their child's anxiety was only mentioned as part of one session. It is thus possible that anxiogenic parenting practices continued in the background, even as kids were performing more tasks independently.

Although the children experienced a reduction in their anxiety symptoms anyway, it may be helpful to add a more thorough parenting component to this treatment with an additional session. Moreover, parents in family 3 demonstrated a steady reduction in their accommodations during the baseline phase. It is possible that the knowledge of participating in an independence-focused treatment or that independence may be beneficial for anxiety is enough to lead to a reduction in overall accommodations on its own.

Five sessions per family was sufficient to accomplish the goals of developing sound understanding of the treatment rationale, building motivation and commitment, designing and gaining significant practice with IAs, problem-solving, and planning for the future. However, the increase in self-reported anxiety symptoms in the final days of the treatment experienced by three out of four families may be explained by their awareness that termination meant they would not have continued support from the therapist after this abbreviated treatment. This result suggests either implementing a low-resource check-in session one month later or increasing the length of treatment could be useful modifications to this study's approach.

This study had several limitations. First, due to the demands of an asynchronous design, internal validity was challenged by the varied times of year in which each subject carried out IAs. The children were subject to different school responsibilities while completing treatment; one child participated entirely during the summertime while the other three participated during different segments of the school year. These differences, coupled with changes in the weather and amount of daylight for outdoor activities, led to variation in each child's ability to successfully complete daily IAs, the types of IAs they could attempt, and possibly their ultimate enjoyment of IAs. However, the varied intervention timetable may have increased generalizability of our findings, as we saw positive effects across our participants. A

nonconcurrent multiple baseline design is meant to enroll research participants at different time points to reduce the recruiting risk of needing all participants at the same time, as is the case in a concurrent multiple baseline design.

Each child's awareness and sensitivity to the goals of the study was high from the beginning. Knowledge of the study's purpose may have led to social desirability effects on the daily self-report measures, which may have been particularly strong given the involvement of parents during each measurement. Moreover, although we could not find evidence of poor data quality, the requirement of providing daily self-report data for several consecutive weeks may have led to careless responding, as this task may have become repetitive and burdensome for the families. The limitation of the daily measures to 6 questions was meant to mitigate experimental fatigue, but it still may have occurred given the large amount of data reported.

Ecological homogeneity may have complicated the generalizability of the results. Each child resided in a relatively safe suburban neighborhood, which likely impacted the parents' willingness to allow their children to complete outdoor IAs. Each family reported feeling comfortable with their child leaving home on their own early on in treatment. Parent and child perceptions of risk would likely be different for families in more urban or more remote settings, and these differences could influence the impact of IAs in meaningful ways. Moreover, each child lived in a two-parent household, which likely affected the pretreatment levels of involvement of the parents and the support the children received before and after completing IAs. Parental overinvolvement is likely topographically distinct and less common in single-parent households, and thus independence-focused treatment may have unique effects for these families. Additionally, this sample was mostly medium-to-high socioeconomic status. It is hard to ascertain whether these findings generalize to a heterogeneous population, especially

because low socioeconomic status has been associated with poorer treatment outcomes for CBT (Taylor et al., 2018). However, the inherent low cost of independence-focused treatment and the resultant increase in parental free time may make IAs more attractive to families of low socioeconomic status with busy parents who may work long hours. Thus, it is possible that families of low socioeconomic status would not be differentially affected by independence-focused treatment.

More data are needed to support conclusions on several of the study's hypotheses, as the researchers did not receive posttest data from two out of the four families and some conflicting results were obtained from the two families who provided data. The magnitude of change was different across scores on all measures for each family; additionally, one family reported *increasing* accommodations of anxious avoidance and *lower* social satisfaction of the child at posttest, while the other family reported improvement in both of these areas. Moreover, the child in family 1 reported a large decrease in social and emotional self-efficacy, while the child in family 4 reported a slight increase in these domains. As such, studies with larger samples are necessary.

Several questions about independence as a treatment for child anxiety remain unanswered. First, this study's sample was composed of children with generalized anxiety and, to some degree, separation anxiety. It is not clear whether independence-focused treatment may be effective in treating other presentations of anxiety, such as specific phobia or obsessive-compulsive disorder (OCD). The diagnosis of specific phobia is highly heterogeneous and, as a result, there is considerable variability in intervention approaches and treatment outcomes (Thng et al., 2020). Exposure-based CBT is considered the most effective intervention, but it involves specifically-tailored exposure to feared stimuli (Thng et al, 2020).

Independence-focused treatment may represent a more universal manualized approach that generalizes across a large number of phobias and may represent a valuable approach for individuals with intense phobias who are unwilling to engage in traditional exposure exercises. Similarly, the treatment of OCD involves exposure to the content of one's fear; however, it includes the crucial added component of eliminating compulsions or safety behaviors (Foa & McLean, 2016). For independence-focused treatment to be effective for OCD, an adapted manual with at least one session focused on psychoeducation related to compulsions and preparations to eschew compulsions while completing IAs in unregulated environments would likely be necessary.

Second, the impact of independence-focused treatment on child depression was not assessed. CBT for depression is highly effective but involves similar drawbacks to that of CBT for anxiety, such as high cost, long treatment length, and insufficient access (Collins et al., 2004; Lepping et al., 2017; Seligman & Ollendick, 2011). Independence-focused treatment may address these drawbacks while also targeting transdiagnostic mechanisms of depression, including maladaptive beliefs, dysfunctional attitudes, and behavioral withdrawal (Webb et al., 2012). Children engaging with chosen, reinforcing IAs may experience significant mood benefits irrespective of their experiences with anxiety.

Third, an evaluation of cultural differences on views of independence and culture's impact on the effectiveness of this treatment is indicated. It has been well-established that cultural views of independence are multifaceted and complex, with diverse values based on diverse beliefs about social rules, empathy, control, self-esteem, and several other constructs (Raef, 2010). Different cultures employ varying child-rearing practices; the goal of Japanese parenting has been described as "blurring the boundaries" between mother and child (Caudill &

Weinstein, 1974; Weisz et al., 1984). Suizzo (2007) surveyed 343 Asian American, African American, Latino American, and European American parents, and found that differences in views on independence and interdependence could be explained by ethnicity. The author found that African American and Mexican American parents placed greater importance on agency than the other ethnicities, and argued that this was due to increased institutional barriers to achievement experienced by these populations. Thus, culture may moderate both the attractiveness and the effectiveness of independence-focused treatment, as families from cultural backgrounds that value independence may be more willing to engage in independence-focused treatment and to complete challenging IAs. The presentation of IAs and the language used to encourage families to participate in independence-focused treatment should be carefully considered and culturally-informed, and alterations to the approach may be necessary depending on the beliefs espoused by the families.

In summary, the results of this pilot study suggest that independence-focused intervention has promise in treating child anxiety cheaply, briefly, acceptably, and effectively. Innovative approaches to the treatment of child anxiety are needed given the alarmingly immense and rapid rise in anxiety among children and the limitations of our current tools in meeting the needs of these children. Independence-focused treatment offers novel and useful ideas that may help bridge the gap between anxious children and accessible treatment in enjoyable and exciting ways. More data are needed to support this study's conclusions, but results from four families are encouraging and justify additional research on this topic.

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