



# Combined Emotional Socialization Training and Family Accommodation Modification: Impact on Emotional Regulation and Anxiety Symptoms in Anxious Children

Maryam Hassanzadeh-Avval

Ali Mashhadi

Ferdowsi University of Mashhad

Cynthia Suveg

University of Georgia, Athens

Imanollah Bigdeli

Seyed Amir Amin Yazdi

Ferdowsi University of Mashhad

Mahdi Abdollahzadeh Rafi

Malayer University

Past studies show that emotional socialization and family accommodation are involved in children's anxiety, but research has yet to investigate whether targeting emotional socialization training (EST), family accommodation modification (FAM), or EST and FAM in tandem can reduce anxiety in children. The purpose of this study was to evaluate the efficacy of a combination of EST and FAM on improving emotion regulation (ER) and reducing anxiety symptoms in anxious children. The sample consisted of 80 children with an anxiety disorder ( $M_{age} = 6.7$ ,  $SD = 0.1$ ) and their mothers. Mothers were randomly assigned to an EST ( $n = 17$ ), FAM ( $n = 16$ ), Combined ( $n = 17$ ), or a waitlist control (WLC) ( $n = 16$ ) groups. Mothers completed The Emotion Regulation Checklist (ERC) and Spence Children's Anxiety Scale (SCAS) at pre-test, post-test, and at 6-month of follow-up. The results showed that the EST, FAM, and Combined groups were more effective than WLC in improving ER and reducing anxiety severity

at post-test and follow-up. Among the intervention groups, children in the combined group showed greater reductions in the severity of anxiety symptoms and emotion dysregulation than the other two groups. Assisting parents to use strategies that encourage healthy emotion regulation and decrease family accommodation might help reduce the severity of children's anxiety symptoms.

*Keywords:* emotion socialization; family accommodation; emotion regulation; Emotion Dysregulation Model of Anxiety (EDMA); anxious children

ANXIETY DISORDERS (AD) in youth are highly prevalent, are associated with significant impairment across developmental domains, and continue into adulthood if left untreated (Costello et al., 2003; O'Neil et al., 2012). Combined with the relatively modest response rates to gold-standard treatment approaches and significant relapse rates (see Whiteside et al., 2020, for a review), improving treatment outcomes for youth with anxiety disorders is critical for ensuring the long-term well-being of this group. To this end, previous work has shown the benefits of targeting emotion parenting behaviors and family accommodation within the context of cognitive-behavioral treat-

Address correspondence to Ali Mashhadi, Ph.D., Department of Psychology, Faculty of Education Sciences and Psychology, Ferdowsi University of Mashhad, Mashhad 9177948974, Iran. e-mail: [mashhadi@um.ac.ir](mailto:mashhadi@um.ac.ir).

0005-7894/© 2021 Association for Behavioral and Cognitive Therapies. Published by Elsevier Ltd. All rights reserved.

ment (CBT) programs, for reducing anxiety in school-age children (Lebowitz et al., 2020; Rose et al., 2015; Silk et al., 2013). However, when offered alone, such additions have not yielded significant benefits beyond that offered by traditional CBT programs. We build upon this literature substantively by comparing a combined approach (emotion parenting plus family accommodation) to emotion parenting- and family accommodation-only interventions. Further, we examine the cultural applicability of the interventions in an Iranian sample, which is grossly underrepresented in the literature.

Both genetic and environmental factors are involved in the development and maintenance of anxiety disorders (Breinholst et al., 2019; Gregory & Eley, 2007), in part through their effects on the development of emotion regulation. Emotion regulation (ER) involves modifying emotional experiences in the service of one's goal (Thompson, 1994) and difficulties in ER are believed to underlie many forms of psychopathology, including anxiety disorders (Aldao et al., 2016; Werner & Gross, 2010). A significant body of work has now documented deficits in ER in children with ADs (Loevaas et al., 2018; Mathews et al., 2016; Schäfer et al., 2017; Sendzik et al., 2017).

Developmental models have been proposed to explain the links between family factors, temperament, and emotion regulation and their associations with anxiety in youth. For instance, behavioral inhibition is a significant risk factor for anxiety disorders (Sandstrom et al., 2020) and the Emotion Dysregulation Model of Anxiety (EDMA; Suveg et al., 2010) proposes that children high in behavioral inhibition are likely to experience high levels of arousal in new situations, which might pose challenges to adaptive emotion regulation. Additionally, the EDMA posits that family emotional environments characterized by restricted emotional expressiveness may interfere with healthy child emotion regulation. In such situations, youths may learn to inhibit their emotional expressions, which likely contributes to greater sympathetic activation (Gross & Levenson, 1997) that may, in turn, contribute to greater emotion dysregulation. Youths living in family environments that are emotionally restrictive might also miss out on important opportunities to discuss and learn about healthy ways of managing emotions, thus, further interfering with healthy development of ER.

Indeed, research has found that parents of anxious children engage in less discussion of emotions with their children and generally show

unsupportive reactions in response to negative emotional displays than parents of nonanxious children (Suveg et al., 2008; Hurrell et al., 2015). Family processes related to the child's ER are termed emotion socialization and generally refer to the strategies that parents use to teach their children about emotions, their causes and consequences, and how to organize and regulate them (Eisenberg et al., 1998). Though parents undoubtedly influence the emotional development of children, the process is more bidirectional, involving parent-child reciprocal influences, than the term "socialization" suggests (Morelen & Suveg, 2012; Morris et al., 2007).

In fact, family accommodation is often elicited as a result of children's displays of distress. Parents engage in accommodation when they change their behavior to help reduce the child's distress (Lebowitz et al., 2012). Children with anxiety often engage in ineffective coping strategies (Campbell-Sills et al., 2006; Carthy et al., 2010), which maintains or increases anxious distress. Parents of children with anxiety may not feel confident in responding to such distress (Calvocoressi et al., 1995; Shafran et al., 1995), which may result in the use of ineffective support strategies that serve to strengthen the child's anxiety. Almost all parents of anxious children are involved in some degree of family accommodation, with 98% of parents exhibiting at least one accommodation behavior (Kagan et al., 2016). Family accommodation varies but often includes maintaining anxiety-related avoidances, such as allowing the child stay home from school, following strict rules related to anxiety-triggering stimuli, or providing excessive reassurance when the child is anxious (Lebowitz et al., 2012). Although family accommodation can reduce the child's distress in the short term, it maintains anxiety over the long term by facilitating avoidance (Ginsburg et al., 2004).

Given the ER deficits involved in child anxiety, researchers have examined the efficacy of emotion-focused interventions with mixed results (Kennedy et al., 2019; Suveg et al., 2018). For instance, Suveg and colleagues found that an emotion-focused CBT program was equally effective in reducing anxiety symptoms in a clinical sample of school-age children as a traditional CBT program, but not better. Further, ER at pretreatment did not moderate outcomes. Similarly, Lebowitz et al. (2020) found that a parent intervention focused on reducing family accommodation showed greater reductions in this process than traditional CBT, but the interventions showed similar effects in reducing anxiety symptoms. Researchers

have not, however, examined whether parent-focused interventions that specifically target emotion socialization and family accommodation behaviors in tandem lead to reductions in child anxiety.

Importantly, the literature on emotion-processes involved in child anxiety is largely based on research with Western samples. However, the scant literature with families of 6- to 8-year-old children living in Iran found that nearly all mothers reported helping their child avoid frightening stimuli, using reassurance to reduce their child's anxiety, changing family routines, and even modifying work schedules, to reduce their child's anxiety (Hassanzadeh-Avval et al., 2021). A majority of mothers reported the accommodations were effective in reducing their child's anxiety but still felt worry about their child's emotional state. Despite mothers' belief that accommodation reduced their child's anxiety, results showed that, consistent with Western samples, there was a positive association between family accommodation and children's anxiety symptoms (Hassanzadeh-Avval et al., 2021).

This study builds upon the extant literature meaningfully by examining the efficacy of an intervention that includes both emotion socialization and family accommodation training in comparison to an emotion socialization only, a family accommodation only intervention, and a waitlist control. Further, we examine these interventions in an Iranian sample to test their cultural applicability. The combined program included key components of both EST and FAM interventions (see description below). The logic of the combined program used in the present study is based on the theoretical and empirical literature (Lebowitz et al., 2014; Suveg et al., 2010). Being in a facilitative emotional environment enables the child to develop healthy emotion regulation skills that are needed to successfully overcome stressful emotional situations. When combined with intervention strategies designed specifically to reduce family accommodation, such emotion parenting strategies can reduce anxiety, perhaps via multiple pathways. A reduction in family accommodation approaches provides the child with opportunities to experience a range of emotions, including anxiety, that the child then learns to manage in the context of supportive emotion parenting behaviors. Over time, perhaps the child is able to implement effective regulatory strategies earlier in the emotional experience, which makes it easier to manage overall and reinforces the child's use of emotion regulatory strategies.

Importantly, we acknowledge that prior interventions have included similar intervention components as EST and FAM. For instance, in a recent review of family interventions for youth anxiety, Peris et al. (2021) identified five parenting correlates of anxiety that have been targeted in treatments for anxious youth: overprotection/control/intrusiveness, anxious cognitive style and modeling, hostility/criticism, and symptom accommodation. Most certainly EST strategies would include modeling of adaptive emotion regulation strategies similar to interventions that target parent anxious cognition and modeling. However, EST is broader than this. EST includes facilitating emotion understanding in oneself and others and scaffolding adaptive emotion regulation across emotional experiences broadly. Similarly, prior work has targeted the reduction of hostility/criticism in parents of anxious youth. Such strategies might in fact fall under the broad umbrella of emotion parenting behaviors designed to reduce anxiety. However, an explicit EST approach would focus more broadly on assisting youth in creating a space to explore their emotional experiences (both negative and positive) in an emotionally supportive environment. Parent hostility may be addressed, but it would be just a small part of a broader EST approach.

Based on the extant literature, we hypothesize that three intervention groups will show greater improvements in ER and reductions in FA, emotion dysregulation and anxiety in comparison to the waitlist control and that the greatest gains will be evident in the combined condition.

## Method

### PARTICIPANTS

To identify anxious children, 488 first-grade children were evaluated using random cluster sampling at school. Children with *T* scores at or above 65 on the Spence Children's Anxiety Scale (Parent report;  $n = 488$ ) were scheduled for a diagnostic assessment at the university laboratory. Parents completed the Behavioral Checklist and children and parents were administered the Structured Clinical Interview for Axis I Disorders (First et al., 1997); 108 children ( $M_{\text{age}} = 6.7$ ,  $SD = 0.1$ ) were diagnosed with at least one anxiety disorder.

To participate in the study, participants met the following criteria: (a) child met criteria for an anxiety disorder (i.e., separation anxiety, specific phobia, social phobia); (b) child age was between 6 years and 6 months to 6 years and 11 months; (c) the mother was literate and willing to

participate in the study; (d) the participating parent indicated engaging in family accommodation at least once or twice a week based on the family accommodation questionnaire. Families were excluded if the mother could not attend more than one training session (whether primary or compensatory) or if the child met criteria for a behavioral disorder such as ADHD, conduct disorder or oppositional-defiant disorder, schizophrenia (according to the results of the Structured Clinical Interview for Axis I Disorders I). Families were also excluded if the mother self-reported an emotional disorder (e.g., major depression, obsessive-compulsive disorder) or a specific physical illness such as cancer.

Sixty-six mothers ( $M_{\text{age}} = 33.9$ ;  $SD = 5.4$ ) and their children ( $M_{\text{age}} = 6.8$ ;  $SD = 0.1$ ) were included. All mothers who participated in the study were married and did not work outside the home as is common in Iranian culture. The average monthly income of their family was \$210, which falls in the lower middle class in terms of socio-economic status in Iran.

There were no statistically significant differences between the groups on demographic variables (child/mother age, child gender [27 boys, 39 girls], or socioeconomic status).

#### MEASURES

##### *Structured Clinical Interview for Axis I Disorders (SCID-I)*

This study used a translated version of SCID-I into Farsi. SCID-I is a standardized community-based tool for evaluating major psychiatric disorders based on the DSM-IV definitions and criteria designed for clinical and research purposes. The tool has two versions: the clinical version (SCID-CV), which covers most of the psychiatric diagnoses and is mainly designed for use in clinics and clinical research, and the longer and more comprehensive SCID-R that covers all diagnosis and the subtypes of diagnosis and measures the severity and course of the disorders. The clinical version of SCID-I was used in this study.

##### *Emotion Regulation Checklist*

The Emotion Regulation Checklist is a 24-item adult-report measure (4-point Likert scale; 1 = never to 4 = always) of children's typical methods of managing emotional experiences, which was administered to both mothers and fathers (Shields & Cicchetti, 1997). The checklist has two subscales: (a) Emotion Regulation—measures appropriate emotional display, empathy, and emotional self-awareness (e.g., “Is empathetic towards others”) and (b) lability/negativity—lack of flexi-

bility, mood lability, and dysregulated negative affect (e.g., “Exhibits wide mood swings”). The ERC has been used previously in Iranian samples (Mahmoudi et al., 2016) and the reliability for both scales was acceptable in this study (Emotion Regulation  $\alpha = .80$ , Lability / Negativity  $\alpha = .84$ ).

##### *Spence Children's Anxiety Scale, Parent Report (Spence, 1998)*

The SCAS is a 38-item measure of anxiety symptoms on 6 subscales: Generalized Anxiety Disorder; Obsessive-Compulsive Disorder; Specific Phobia; Panic and Agoraphobia; Separation Anxiety; and Social Anxiety. The measure contains an additional six positive “filler items” to reduce negative response bias. Respondents indicate the frequency with which each symptom occurs on a 4-point scale from 0 (*never*) to 3 (*always*). The SCAS has been used with Iranian samples and in this study  $\alpha = .88$  (Mousavi et al., 2007).

##### *Child Behavior Checklist (CBCL)*

The CBCL is a widely used checklist that assesses broad and specific components of child's functioning (Achenbach & Rescorla, 2001). The Behavioral Problems section of the checklist consists of 113 questions rated on a 0 to 2 Likert scale. The checklist also has DSM-based subscales: affective problems, anxiety problems, attention-deficit hyperactivity problems, conduct problems, oppositional defiant problems, and somatic problems. Minaee (2006) has translated this checklist to Farsi and found acceptable reliability and validity. The reliability of the behavioral checklist was appropriate in this study ( $\alpha = .90$ ).

##### *Family Accommodation Scale-Anxiety (FASA)*

This parent-report questionnaire assesses the extent of family accommodation in children's anxiety disorders and includes 9 questions and two subscales: (1) Symptom Participation and (2) Functional Improvement (Lebowitz et al., 2013). The questionnaire is rated on a 5-point Likert scale from 0 (*never*) to 4 (*daily*). The Family Accommodation Questionnaire has been previously used successfully in a sample of Iranian children Hassanzadeh-Avval et al. (2021) and in this study internal consistency was .85.

#### PROCEDURE

Using cluster sampling, 15 primary schools in Malayer were selected. Then, after coordination with the school principal, an invitation was sent to the children's mother. On the pre-arranged day, all mothers who wished to participate in the study were present in the school assembly hall, after which the researcher gave a brief explanation

of the research process. He also spoke about typical/atypical development in childhood and the importance of early detection of children's socio-emotional problems to encourage mothers to participate in research.

After the lecture, all mothers wishing to participate in the study were asked to complete the consent form to participate in the study. The research assistant guided the mothers who signed the consent form to the hall to complete the rest of the assessments that included demographic information (contact information, child and parent age, child gender, parents' education and occupation, parents' marital status), the child behavior checklist, and the Spence Child Anxiety Inventory. Forms were coded to protect personal information.

The research assistant was present to answer any questions the mothers might have had and to review the completed questionnaires (this process was done separately for each of the 15 schools). Children with T-scores above 60 and/or 69 on the Spence Child Anxiety Questionnaire and Child Behavior Checklist, respectively, were invited for a clinical interview. Mothers who agreed to participate were scheduled for the interview and the research assistant called to remind mothers ahead of time.

After a clinical interview conducted by a child psychologist, children with behavioral disorders were excluded from the study and given referrals for treatment elsewhere. After the clinical interview, 108 children remained in the study. Mothers of the remaining 108 children were again invited to complete the Family accommodation Questionnaire at school (on a specific day). On the appointed day, the research assistant was present at the school to guide the mothers and answer any questions they might have about how to complete the questionnaire. All mothers endorsed engaging in family accommodation at least once a week and thus, were eligible to participate in the treatment study.

Names of all mothers with anxious children were randomly listed, and four groups of 20 were randomly assigned. One group was randomly selected as a Waiting List Control (WLC) group, the other as an Emotional Socialization Training (EST) group, the third group as a Family Accommodation Modification (FAM), and the fourth group as a Combined group (EST with FAM). The EST group and the FAM group each participated in 6 training sessions, and the combined group participated in 10 training sessions. Both intervention groups were given two sessions each week, with each session lasting between one hour

to one hour and a half. The intervention program for each of the three groups was held on one day, and only the hour of the meeting was different per day. To counteract the effect of the time of the meeting, the time for the groups was rotated. The waitlist group received the combined intervention after all active treatments were completed given its greater efficacy in comparison to the other groups. Mothers completed questionnaires at 1- and 6-month follow-up. For each group, follow-up was performed 6 months after the completion of the intervention (last treatment session). Also, all intervention sessions were delivered by a doctor of child psychology who was masked from research objectives, randomizations, and assessments of participants.

Iranian Registry of Clinical Trials approved this research (IRCT20190111042325N1) (see <https://en.irct.ir/trial/36747>).

### *Interventions*

This study included 3 active treatments: EST only, FAM only, and a combined EST and FAM treatment arm. The EST program was based on the program developed by Harvey and colleagues (Herbert et al. 2013; Harvey et al., 2015) and with little change, we used the same program. The FAM program was modeled after those developed by Rapee et al. (2008) and Kendall et al. (2013).

All interventions included an initial rapport-building session and both parents and children were present for all sessions. Additionally, all interventions included a basic education component that reviewed the causes of anxiety (both environmental and genetic). The EST and FAM interventions were 60 minutes long over 6 weeks and the combined intervention sessions were 60 minutes over a 10-period week. The distinguishing feature of the EST program was its focus on effective emotion-parenting strategies designed to increase healthy emotional functioning in the child whereas the distinguishing feature of the FAM program was on assisting parents in how to effectively manage the child's anxiety in part, through reducing family accommodation. The Combined intervention included the distinguishing features of both the EST and FAM programs. More specifically, the primary components of the EST intervention included teaching parents about children's emotional development. For instance, mothers learned about emotional development. Mothers also learned about identifying and labeling children's emotions. The EST treatment focused not only on negative emotional experiences, but positive ones as well, and the therapist helped the families identify opportunities for posi-

tive emotional experiences. Finally, mothers were heavily coached in how to model appropriate emotional expression and regulation and how to reinforce their child's effective emotional regulation.

The distinguishing feature of the FAM treatment included a strong focus on how to effectively manage their child's anxiety and reduce family accommodation. For instance, therapists helped mothers to identify reassurance behaviors and replace them with effective coping and positive self-talk. Similarly, therapists reviewed the concept of avoidance and the importance of modeling courageous behavior and reinforcing their child's brave behavior. During the FAM intervention, mothers learned about parental impatience in response to children's anxiety and effective parenting behaviors to use as substitutes, including ignoring children's anxiety. In this way, both the EST and FAM interventions included emotion regulation strategies, but the focus in the FAM condition was anxiety whereas the EST condition included emotion regulation broadly. The Combined intervention included components of both the EST and FAM approaches.

#### DATA ANALYSIS

A power analysis using G\*Power software 3.1.9.2 (Faul et al., 2007) indicated that a total of 72 participants was necessary to detect a medium effect size using alpha of .05. If there are four groups, and if the researcher also wants to compare groups using variance analysis test and consider effect size 0.5, alpha 0.05, and beta (test power) 0.8, it will require a sample of 72 people. However, in the present study, with a 10% probability of falling, the sample was 80 people. Using a simple random sampling method, 80 out of 108 anxious children were selected.

All 80 participants completed baseline questionnaires. During the study, 4 out of 20 participants from WLS and 4 participants from FAM group and also 3 participants from EST group and 3 participants from combined condition dropped out because of family obligations or schedule incompatibilities at posttest. There were no dropouts at follow-up in four conditions (for more details, please see Figure 1).

The analysis was performed on the data collected from 66 mothers of youth who participated in the interventions. Descriptive and inferential analyses were performed using SPSS-26. Mixed Repeated Measures Analysis of Variance (RM-ANOVA) were used to test the hypothesis. We included all four groups in the analysis. We examined the effect of time (pre-test, post-test and follow-up), group (combination, socialization,

accommodation and waiting list) and time-group interaction (comparison of four groups at different times) on anxiety, emotion regulation, family accommodation (see Figure 2).

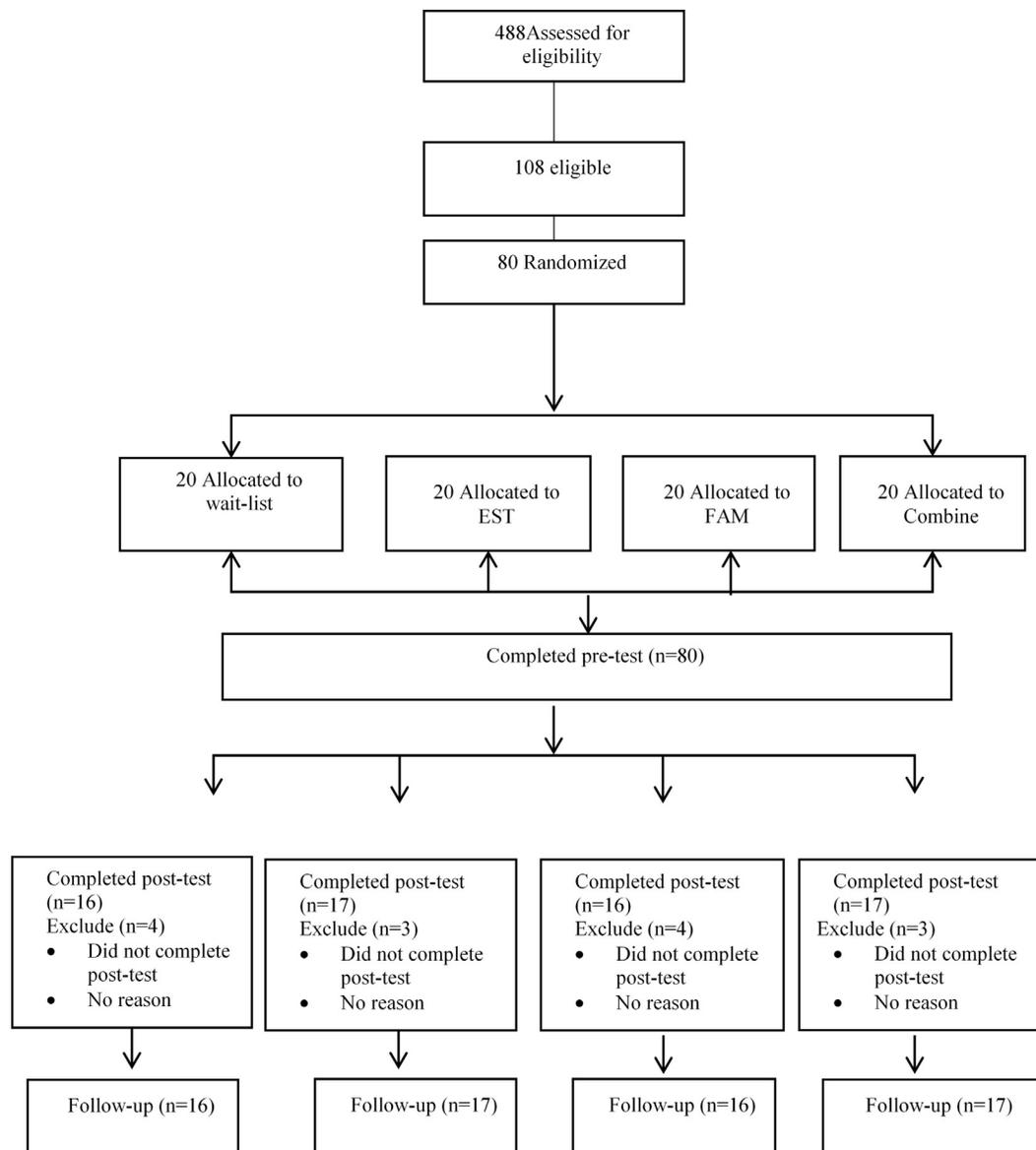
#### Results

Preliminary analyses examined correlations among variables (see Table 1). Family accommodation and emotional dysregulation were positively related with anxiety ( $p < .01$ ) whereas emotion regulation was negatively related to anxiety ( $p < .01$ ). Family accommodation was positively related to emotional dysregulation and negatively related to emotional regulation ( $p < .01$ ).

Descriptive indices of anxiety severity scores, family accommodation and emotion regulation and dysregulation for the four groups are presented in Table 2.

Results of the RM-MANOVA showed a significant effect of time ( $F = 189.66, p < .01, \eta^2 = .75$ ), group ( $F = 16.85, p < .01, \eta^2 = .45$ ) and interaction effects of time  $\times$  group ( $F = 18.78, p < .01, \eta^2 = .48$ ) for symptoms of anxiety. Results revealed the reduction in symptoms of anxiety across pre-test, post-test, and follow-up periods was greater in the intervention groups than the waitlist control. The mean scores of anxiety symptoms did not change significantly in WLC according to the time of measurement ( $p > .05$ ), but in the intervention groups (EST, FAM and combined), anxiety symptoms in post-test and follow-up showed a significant decrease compared to pre-test ( $p < .05$ ). Bonferroni post-hoc tests showed that there were significant differences between each of the time points (pre-, post-, and follow-up) on anxiety scores. When comparing groups, the reduction in the severity of anxiety symptoms was not statistically significant between the EST group and the FAM group ( $p > .05$ ). However, the reduction in the severity of anxiety symptoms in the combined group was significantly greater than the EST group and the FAM group ( $p < .05$ ) (see Table 3).

In terms of emotion dysregulation, the effect of time ( $F = 189.08, p < .01, \eta^2 = .75$ ), group ( $F = 29.94, p < .01, \eta^2 = .59$ ) and interaction effects of time  $\times$  group ( $F = 5.58, p < .05, \eta^2 = .21$ ) were significant. Results revealed a significant reduction in emotion dysregulation from pre-test to post-test ( $p < .01$ ) and follow-up ( $p < .01$ ). In WLC, the mean scores of emotion dysregulation did not change significantly according to the time of measurement ( $p > .05$ ), but in the intervention groups (EST, FAM and combined), emotion dysregulation in post-test and follow-up showed a significant decrease compared to pre-test ( $p < .05$ ). With regard to group comparisons, the EST and FAM



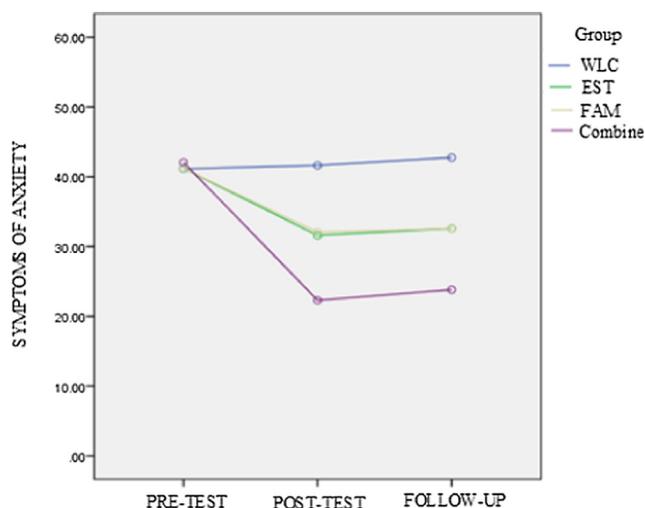
**FIGURE 1** Flowchart of participants in the study. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

groups were not significantly different from each other and the combined group was lower than both (see [Figure 3](#)).

Regarding emotion regulation, there were significant effects of time ( $F = 92.40, p < .01, \eta^2 = .59$ ), group ( $F = 12.87, p < .01, \eta^2 = .38$ ) and interaction effects of time  $\times$  group ( $F = 9.97, p < .01, \eta^2 = .32$ ). Results revealed the increase in emotional regulation across pre-test, post-test, and follow-up periods was larger in the intervention groups than the waitlist control. In the intervention groups, the mean scores of emotional regulation in post-test and follow-up showed a significant increase compared to pre-test ( $p < .05$ ). No significant differences were noted in the

WLC ( $p > .05$ ). Results of Bonferroni's post hoc test showed significant differences between the mean scores of pre-, post- and follow-up ( $p < .001$ ). Among the intervention groups, the combined group showed higher levels of ER than the other two groups ( $p < .05$ ), and comparable increases in ER for the EST and FAM groups ( $p > .05$ ). See [Figure 4](#).

In terms of family accommodation, results showed significant effects of time ( $F = 73.50, p < .01, \eta^2 = .71$ ), group ( $F = 4.23, p < .05, \eta^2 = .17$ ) and interaction effects of time  $\times$  group ( $F = 12.08, p < .01, \eta^2 = .37$ ). Family accommodation across pre-test, post-test, and follow-up periods was larger in the intervention groups than



**FIGURE 2** Symptoms of anxiety scores of EST, FAM, Combined and WLC groups from pre-test to follow-up. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

**Table 1**  
Correlation Between Research Variables in Pretest

	1	2	3
1. Anxiety disorder	-		
2. Family Accommodation	.41**		
3. Regulation	-.53**	-.43**	
4. Dysregulation	.52**	.34**	-.46**

\*\**p* < .01.

the waitlist control. In WLC, the mean scores of family accommodation did not change significantly (*p* > .05), but in the intervention groups

(EST, FAM and combined), family accommodation in post-test and follow-up showed a significant decrease compared to pre-test (*p* < .05). Results of Bonferroni’s post hoc test revealed a significant difference between pre-, post-, and follow-up (*p* < .001) scores. With regard to group comparisons, the combined group showed greater declines in family accommodation than the EST group (*p* < .05); there were no significant differences between the EST and FAM groups or between the FAM and combined groups (see Figure 5).

**Table 2**  
Mean and Standard Deviation of Symptoms of Anxiety and Emotion Dysregulation in Anxious Children Participating in the Study According to Time and Group

Measures	WLC group		EST group		FAM group		Combined group	
	M	SD	M	SD	M	SD	M	SD
<b>Symptoms of Anxiety</b>								
Pretest	41.13	6.94	41.18	6.05	41.19	6.66	42.06	5.70
Posttest	41.63	7.04	31.59	3.95	32.06	5.81	22.29	4.36
Follow-up	42.75	6.69	32.59	4.00	32.56	4.70	23.82	4.41
<b>Emotion Dysregulation</b>								
Pretest	36.63	7.17	36.35	6.54	36.38	6.18	36.76	7.17
Posttest	36.38	7.56	29.47	5.59	29.75	5.69	23.00	4.99
Follow-up	36.25	8.12	29.82	6.14	29.88	5.60	23.59	4.49
<b>Emotion Regulation</b>								
Pretest	19.25	3.38	19.53	3.34	19.31	2.91	19.65	3.08
Posttest	19.56	3.67	23.53	2.12	23.19	2.59	27.41	3.22
Follow-up	19.94	3.42	22.82	3.11	23.00	2.71	26.76	2.86
<b>Family Accommodation</b>								
Pretest	16.88	3.96	16.53	4.52	17.63	4.29	18.71	3.72
Posttest	16.94	3.86	14.29	4.04	10.94	5.25	9.47	3.45
Follow-up	16.81	3.23	13.94	4.21	11.19	5.18	9.53	3.54

Note. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

Table 3  
Repeated Measure Analysis for Symptoms of Anxiety, Family Accommodation and Emotion Dysregulation in Anxious Children

Measures	Time		Group		Time × Group	
	F	$\eta^2$	F	$\eta^2$	F	$\eta^2$
Symptoms of Anxiety	189.66**	.75	16.85**	.45	18.78**	.48
Emotion Dysregulation	189.08**	.75	29.94**	.59	5.58*	.21
Emotion Regulation	92.40**	.59	12.87**	.38	9.97**	.32
Family Accommodation	73.50**	.71	4.23*	.17	12.08**	.37

\*\* $p < .05$ . \*\* $p < .01$ .

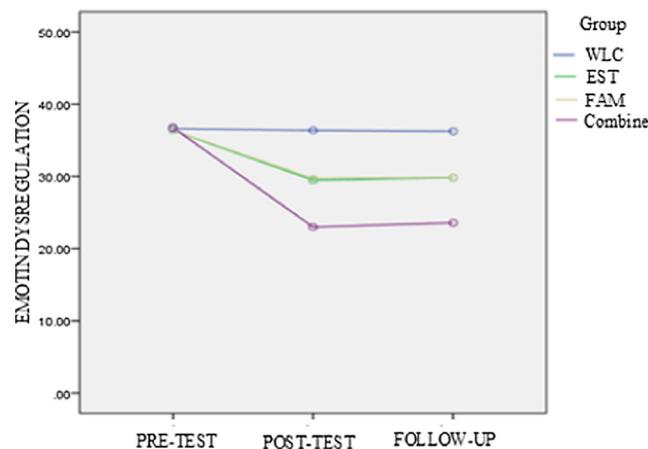


FIGURE 3 Emotion dysregulation scores of EST, FAM, Combined and WLC groups from pre-test to follow-up. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

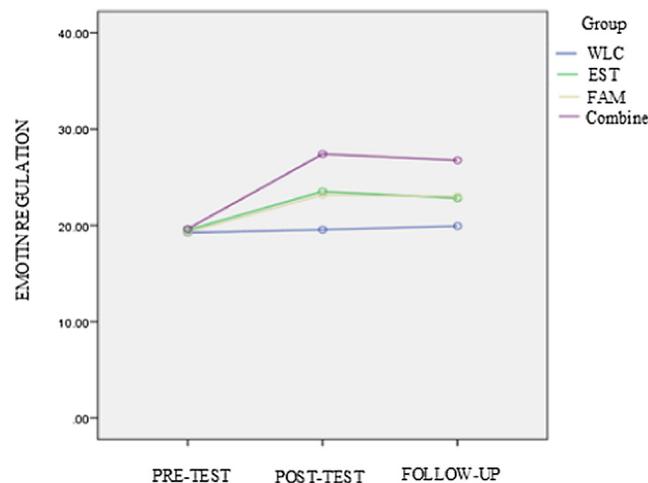
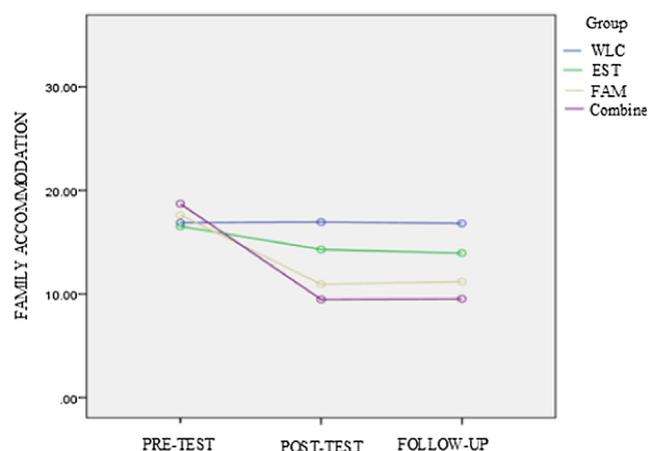


FIGURE 4 Emotion regulation scores of EST, FAM, Combined and WLC groups from pre-test to follow-up. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

## Discussion

Given that both difficulties in emotion regulation and family accommodation are theoretically and empirically linked to anxiety in youth, this study investigated the impact of targeting these processes on outcomes in a clinical sample of children. Results supported study hypotheses. Both the

EST and FAM groups showed increases in ER and decreases in emotion dysregulation and anxiety symptoms in comparison to the WLC condition, but the greatest gains were evident in youth in the combined program. These results are largely in line with the extant literature showing that emotion socialization training with parents can



**FIGURE 5** Family Accommodation scores of EST, FAM, Combined and WLC groups from pre-test to follow-up. EST, Emotional Socialization Training; FAM, Family Accommodation Modification; WLC, waitlist control.

improve emotion regulation in children (Rose et al., 2015) and research showing that family accommodation can improve anxiety treatment outcome (Kagan et al., 2016; Lebowitz et al., 2020; Silk et al., 2013) as well as the theoretical literatures (e.g., Kagan et al., 2016; Lebowitz et al., 2020; Silk et al., 2013; Suveg et al., 2010).

Past research has shown that EST and FAM play a role in improving emotion regulation and reducing anxiety symptoms. However, FAM was typically used as part of an intervention program rather than as a stand-alone intervention (Peris et al., 2021). The present study, in addition to showing that the FAM program alone can be effective, showed that the combination of FAM and EST increases the efficacy of treatment. Also, this study is one of the first studies to test EST & FAM and their impacts on childhood anxiety in Iran. Considering the relatively high prevalence of family accommodations among parents of anxious Iranian children, and parents' lack of knowledge about the negative effects of these adaptations (Hassanzadeh-Avval et al., 2021), the current results are very promising and suggest an effective avenue to decreasing anxiety in Iranian youth and potentially improving the overall well-being of Iranian families.

Regarding emotion regulation abilities, anxious children experience and express more negative emotions than children without anxiety. Difficulties in ER are likely both temperamentally and environmentally based. Regarding environmental influence, parents of anxious children tend to engage in emotion-discouraging strategies in response to children's emotion expressions (Hurrell et al., 2015; Suveg et al., 2008). Such strategies may result in the suppression (or dysreg-

ulation) of emotional experiences, which in turn leads to increased emotional regulation and, consequently, to the intensity of anxiety (Suveg et al., 2010). Similarly, family accommodation maintains, and even exacerbates, youths' anxiety, hindering their ability to build ER skills.

The EST program directly targeted the ER difficulties identified in families of anxious children. In particular, the goal for mothers participating in EST was to gain knowledge of their children's emotional development and identify their own values, beliefs, and goals in emotional expression. EST focused on teaching mothers healthy ways to express emotion, and also provided opportunities for their child to experience positive emotions instead of paying attention to their child's negative emotions and inadvertently reinforcing dysregulated displays of emotion. In addition, mothers in EST learned to model how to express a negative emotion appropriately when they themselves are experiencing a negative emotion. Mothers also modeled appropriate strategies to manage their emotions in front of the child and provide opportunities for the child to then practice. Labeling emotions helps with emotional perception and acceptance, which provide the basis for emotion control (Harvey et al., 2015).

Overall, then, increasing the mother's knowledge of the child's emotional development may help them to respond in developmentally appropriate ways, thereby encouraging healthy emotion regulation. The use of adaptive ER likely reduces physiological arousal and, consequently, the anxiety response as well as other negative emotions. Observing a child's increasingly adaptive ER likely reinforces the parents' use of developmentally appropriate emotion socialization strategies. In

this way, a healthy cycle of emotion functioning in families leads to a further reduction in the child's anxiety response (Wu et al., 2016).

With regard to family accommodation, parents of anxious children report that when their child becomes anxious, they do not know how to respond (Calvocoressi et al., 1995; Shafran et al., 1995), so they take actions that temporarily reduce the child's anxious behavior (Storch et al., 2007). This temporary reduction in anxious behavior, through negative reinforcement, also reinforces the parents' maladaptive behaviors (Wu et al., 2016). At the same time, these accommodations do not help reduce their child's anxiety in the long run (Lebowitz et al., 2015; Lebowitz et al., 2020); thus, a negative cycle is created in which the child's anxiety leads to the use of accommodation and the use of accommodation exacerbates the symptoms of anxiety.

Our results suggest that modifying family accommodations and replacing them with appropriate actions can improve the child's anxiety symptoms in different ways. First, many parents are unaware that what they are doing is accommodation, and these accommodations not only help reduce their child's anxiety problems but are also involved in persistence and exacerbating these symptoms (Lebowitz et al., 2015). Therefore, as their knowledge of accommodations and the role of these accommodations in their child's anxiety increases, they may be more likely to give up or reduce accommodations. Reducing accommodations can reduce a child's avoidance of frightening stimuli (Lebowitz et al., 2014). For example, when parents stop interfering with and overdirecting the child, the child is more likely to find a way to deal with frightening stimuli, or even if he or she does not find a way, he or she will not be able to avoid the negative excitement created by that stimulus. As a result, tolerating a negative emotion reduces the intensity of that emotion, and in the long run, the child learns that by tolerating the negative emotion, the intensity of the emotion can be reduced.

In the FAM intervention, consistent with similar interventions (Kagan et al., 2016; Lebowitz et al., 2020; Silk et al., 2013), mothers learn to use modeling, especially participatory modeling, instead of accommodation. Parents also learn to reinforce courageous and nonanxious behaviors in the child through reward. Importantly, parents learn the basic principles of behavior management, including how to ignore undesirable/anxious behaviors and praise/attend to more desirable behaviors. In short, parents learn a variety of strategies that they can then apply when the child becomes anxious. The

strategies serve the purpose of reducing child anxiety but also decreasing emotion dysregulation and increasing healthy ER more broadly. Emotion socialization and correction of family accommodations can potentially improve the child's emotion regulation by strengthening positive cognitive, behavioral, and physiological strategies associated with emotion regulation and reducing negative cognitive, behavioral and physiological strategies that underlie emotion dysregulation. Collectively, the results that the combined intervention condition outperformed both individual conditions suggest that it is important to specifically target both underlying broad emotion regulation difficulties and family behaviors that reinforce children's anxiety.

### Conclusion

This study used a randomized design to examine the potential impact of interventions designed to specifically target processes known to increase child anxiety. The results were clear and consistent with theoretical and empirical literature; however, limitations are noted. The small sample size did not allow for a rigorous test of how demographic variables, such as age of child and mother, might influence results. The effect of type of anxiety disorder, and mental health status of parents, could also not be assessed given the small sample size. Children with serious behavior problems were excluded. Though we intentionally did this so that we could link intervention effects specifically to anxiety, this decision limits the generalizability of the results. Future work with larger sample sizes can include children with a range of psychopathology symptoms and disorders. Also, the mothers who participated in our study were relatively healthy, both physically and mentally. Future work can assess how these interventions work in the context of parent mental health challenges. The duration of the combined intervention was more than two groups of EST and FAM, which may have influenced the results. Despite these limitations, the present results offer preliminary support for a combined intervention designed to target both maladaptive emotion socialization and family accommodation in the treatment of child anxiety. Future work with larger, diverse samples of families is needed.

### Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

### References

- Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms & profiles: An integrated system of multi-informant assessment*: Aseba.

- Aldao, A., Gee, D. G., De Los Reyes, A., & Seager, I. (2016). Emotion regulation as a transdiagnostic factor in the development of internalizing and externalizing psychopathology: Current and future directions. *Development and Psychopathology*, 28(4pt1), 927–946. <https://doi.org/10.1017/S0954579416000638>.
- Breinholst, S., Walczak, M. A., & Esbjørn, B. H. (2019). Do parental behaviours predict anxiety symptom levels? A 3 year follow up. *Journal of Child and Family Studies*, 28(12), 3425–3432. <https://doi.org/10.1007/s10826-019-01524-3>.
- Calvocoressi, L., Lewis, B., Harris, M., Trufan, S. J., Goodman, W. K., McDougle, C. J., & Price, L. H. (1995). Family accommodation in obsessive-compulsive disorder. *The American Journal of Psychiatry*, 152(3), 441–443.
- Campbell-Sills, L., Barlow, D. H., Brown, T. A., & Hofmann, S. G. (2006). Effects of suppression and acceptance on emotional responses of individuals with anxiety and mood disorders. *Behaviour Research and Therapy*, 44(9), 1251–1263.
- Carthy, T., Horesh, N., Apter, A., Edge, M. D., & Gross, J. J. (2010). Emotional reactivity and cognitive regulation in anxious children. *Behaviour Research and Therapy*, 48(5), 384–393.
- Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, 60(8), 837–844.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9(4), 241–273.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (1997). *User's guide for the Structured clinical interview for DSM-IV axis I disorders SCID-I: Clinician version*. American Psychiatric Pub.
- Ginsburg, G. S., Grover, R. L., & Ialongo, N. (2004). Parenting behaviors among anxious and non-anxious mothers: Relation with concurrent and long-term child outcomes. *Child & Family Behavior Therapy*, 26(4), 23–41. [https://doi.org/10.1300/J019v26n04\\_02](https://doi.org/10.1300/J019v26n04_02).
- Gregory, A. M., & Eley, T. C. (2007). Genetic influences on anxiety in children: What we've learned and where we're heading. *Clinical Child and Family Psychology Review*, 10(3), 199–212.
- Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: The acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology*, 106(1), 95–103.
- Harvey, E., Herbert, S. D., & Stowe, R. (2015). *Parenting Hyperactive Preschoolers: Clinician Guide*. Oxford University Press.
- Hassanzadeh-Avval, M., Mashhadi, A., Bigdeli, I., & Amin Yazdi, S. A. (2021). The prevalence of family accommodation and its relation with anxiety in anxious children. *Journal of Pediatric Nursing*, 7(2), 67–74.
- Herbert, S. D., Harvey, E. A., Roberts, J. L., Wichowski, K., & Lugo-Candelas, C. I. (2013). A randomized controlled trial of a parent training and emotion socialization program for families of hyperactive preschool-aged children. *Behavior Therapy*, 44(2), 302–316. <https://doi.org/10.1016/j.beth.2012.10.004>.
- Hurrell, K. E., Hudson, J. L., & Schniering, C. A. (2015). Parental reactions to children's negative emotions: Relationships with emotion regulation in children with an anxiety disorder. *Journal of Anxiety Disorders*, 29, 72–82. <https://doi.org/10.1016/j.janxdis.2014.10.008>.
- Kagan, E. R., Peterman, J. S., Carper, M. M., & Kendall, P. C. (2016). Accommodation and treatment of anxious youth. *Depression and Anxiety*, 33(9), 840–847. <https://doi.org/10.1002/da.22520>.
- Kendall, P. C., Crawley, S. A., Benjamin, C. L., & Mauro, C. F. (2013). *Brief Coping Cat: Therapist manual for the 8-session workbook*. Workbook Publishing, Incorporated.
- Kennedy, S. M., Bilek, E. L., & Ehrenreich-May, J. (2019). A randomized controlled pilot trial of the unified protocol for transdiagnostic treatment of emotional disorders in children. *Behavior Modification*, 43(3), 330–360. <https://doi.org/10.1177/0145445517753940>.
- Lebowitz, E. R., Marin, C., Martino, A., Shimshoni, Y., & Silverman, W. K. (2020). Parent-based treatment as efficacious as cognitive-behavioral therapy for childhood anxiety: A randomized noninferiority study of supportive parenting for anxious childhood emotions. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(3), 362–372. <https://doi.org/10.1016/j.jaac.2019.02.014>.
- Lebowitz, E. R., Omer, H., Hermes, H., & Scahill, L. (2014). Parent training for childhood anxiety disorders: The SPACE program. *Cognitive and Behavioral Practice*, 21(4), 456–469.
- Lebowitz, E. R., Panza, K. E., Su, J., & Bloch, M. H. (2012). Family accommodation in obsessive-compulsive disorder. *Expert Review of Neurotherapeutics*, 12(2), 229–238.
- Lebowitz, E. R., Scharfstein, L., & Jones, J. (2015). Child-report of family accommodation in pediatric anxiety disorders: Comparison and integration with mother-report. *Child Psychiatry & Human Development*, 46(4), 501–511.
- Lebowitz, E. R., Woolston, J., Bar-Haim, Y., Calvocoressi, L., Dauser, C., Warnick, E., Scahill, L., Chakir, A. R., Shechner, T., Hermes, H., Vitulano, L. A., King, R. A., & Leckman, J. F. (2013). Family accommodation in pediatric anxiety disorders. *Depression and Anxiety*, 30(1), 47–54. <https://doi.org/10.1002/da.21998>.
- Loevaas, M. E. S., Sund, A. M., Patras, J., Martinsen, K., Hjemdal, O., Neumer, S.-P., Holen, S., & Reinfjell, T. (2018). Emotion regulation and its relation to symptoms of anxiety and depression in children aged 8–12 years: Does parental gender play a differentiating role? *BMC Psychiatry*, 6(1), 1–11. <https://doi.org/10.1186/s40359-018-0255-y>.
- Mahmoudi, M., Borjali, A., Alizadeh, H., Ghobari Bonab, B., Ekhtari, J., & AkbariZardadkhane, S. (2016). Emotion regulation in children with learning disorders and normal children. *Research in School and Virtual Learning*, 4(13), 69–84.
- Mathews, B. L., Koehn, A. J., Abtahi, M. M., & Kerns, K. A. (2016). Emotional competence and anxiety in childhood and adolescence: A meta-analytic review. *Clinical Child and Family Psychology Review*, 19(2), 162–184. <https://doi.org/10.1007/s10567-016-0204-3>.
- Minaee, A. (2006). Adaptation and standardization of child behavior checklist, youth self-report, and teacher's report forms. *Journal of Exceptional Children*, 6(1), 529–558.
- Morelen, D., & Suveg, C. (2012). A real-time analysis of parent-child emotion discussions: The interaction is reciprocal. *Journal of Family Psychology*, 26(6), 998–1003.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development*, 16(2), 361–388.
- Mousavi, R., Moradi, A. R., Farzad, V., & Mahdavi, S. (2007). Psychometric properties of the Spence children's

- anxiety scale with an Iranian sample. *International Journal of Psychology*, 1(1), 17–26.
- O’Neil, K. A., Puleo, C. M., Benjamin, C. L., Podell, J. L., & Kendall, P. C. (2012). Suicidal ideation in anxiety-disordered youth. *Suicide and Life-Threatening Behavior*, 42(3), 305–317.
- Peris, T. S., Thamrin, H., & Rozenman, M. S. (2021). Family intervention for child and adolescent anxiety: A meta-analytic review of therapy targets, techniques, and outcomes. *Journal of Affective Disorders*, 286, 282–295. <https://doi.org/10.1016/j.jad.2021.02.053>.
- Rapee, R., Wignall, A., Spence, S., Lyneham, H., & Cobham, V. (2008). *Helping your anxious child: A step-by-step guide for parents*. New Harbinger Publications.
- Rose, J., Gilbert, L., & McGuire-Snieckus, R. (2015). Emotion Coaching-a strategy for promoting behavioural self-regulation in children/young people in schools: A pilot study. *The European Journal of Social & Behavioural Sciences*, 13, 1766–1790.
- Sandstrom, A., Uher, R., & Pavlova, B. (2020). Prospective association between childhood behavioral inhibition and anxiety: A meta-analysis. *Journal of Abnormal Child Psychology*, 48(1), 57–66. <https://doi.org/10.1007/s10802-019-00588-5>.
- Schäfer, J. Ö., Naumann, E., Holmes, E. A., Tuschen-Caffier, B., & Samson, A. C. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of Youth and Adolescence*, 46(2), 261–276. <https://doi.org/10.1007/s10964-016-0585-0>.
- Sendzik, L., Schäfer, J. Ö., Samson, A. C., Naumann, E., & Tuschen-Caffier, B. (2017). Emotional awareness in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of Youth and Adolescence*, 46(4), 687–700.
- Shafraan, R., Ralph, J., & Tallis, F. (1995). Obsessive-compulsive symptoms and the family. *Bulletin of the Menninger Clinic*, 59(4), 472.
- Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: The development and validation of a new criterion Q-sort scale. *Developmental Psychology*, 33(6), 906–916.
- Silk, J. S., Sheeber, L., Tan, P. Z., Ladouceur, C. D., Forbes, E. E., McMakin, D. L., Dahl, R. E., Siegle, G. J., Kendall, P. C., Mannarino, A., & Ryan, N. D. (2013). “You can do it!”: The role of parental encouragement of bravery in child anxiety treatment. *Journal of Anxiety Disorders*, 27(5), 439–446.
- Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy*, 36(5), 545–566.
- Storch, E. A., Geffken, G. R., Merlo, L. J., Jacob, M. L., Murphy, T. K., Goodman, W. K., Larson, M. J., Fernandez, M., & Grabill, K. (2007). Family accommodation in pediatric obsessive-compulsive disorder. *Journal of Clinical Child and Adolescent Psychology*, 36(2), 207–216. <https://doi.org/10.1080/15374410701277929>.
- Suveg, C., Jones, A., Davis, M., Jacob, M. L., Morelen, D., Thomassin, K., & Whitehead, M. (2018). Emotion-focused cognitive-behavioral therapy for youth with anxiety disorders: A randomized trial. *Journal of Abnormal Child Psychology*, 46(3), 569–580.
- Suveg, C., Morelen, D., Brewer, G. A., & Thomassin, K. (2010). The emotion dysregulation model of anxiety: A preliminary path analytic examination. *Journal of Anxiety Disorders*, 24(8), 924–930.
- Suveg, C., Sood, E., Barmish, A., Tiwari, S., Hudson, J. L., & Kendall, P. C. (2008). “I’d rather not talk about it”: Emotion parenting in families of children with an anxiety disorder. *Journal of Family Psychology*, 22(6), 875–884. <https://doi.org/10.1037/a0012861>.
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, 59(2–3), 25–52.
- Werner, K., & Gross, J. J. (2010). Emotion regulation and psychopathology: A conceptual framework. In A. M. Kring & D. M. Sloan (Eds.), *Emotion regulation and psychopathology: A transdiagnostic approach to etiology and treatment*. The Guilford Press (pp. 13–37). The Guilford Press.
- Whiteside, S. P., Sim, L. A., Morrow, A. S., Farah, W. H., Hilliker, D. R., Murad, M. H., & Wang, Z. (2020). A meta-analysis to guide the enhancement of CBT for childhood anxiety: Exposure over anxiety management. *Clinical Child and Family Psychology Review*, 23(1), 102–121. <https://doi.org/10.1007/s10567-019-00303-2>.
- Wu, M. S., McGuire, J. F., Martino, C., Phares, V., Selles, R. R., & Storch, E. A. (2016). A meta-analysis of family accommodation and OCD symptom severity. *Clinical Psychology Review*, 45, 34–44. <https://doi.org/10.1016/j.cpr.2016.03.003>.

RECEIVED: March 30, 2021

ACCEPTED: September 16, 2021

AVAILABLE ONLINE: XXXX