

Does the transdiagnostic EMOTION intervention improve emotion regulation skills in children?

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Short title: Emotion Regulation in a Prevention Intervention

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NOTES

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Availability of data: The dataset will be made available on reasonable request to the corresponding author.

Abstract

Emotion regulation is thought to be an important transdiagnostic process across internalizing disorders in youth, and the regulation of emotions is believed to play a central role in both adaptive and maladaptive development. Several preventive interventions focus on improving children's emotion regulation skills, but research regarding the outcomes of emotion regulation skills are scarce. We therefore investigated whether a new transdiagnostic indicated prevention intervention for anxiety and depressive symptoms, the EMOTION program, improves emotion regulation skills as reported by parents of children aged 8 – 12 years. Data from a large national cluster randomized control trial (RCT) study, Coping Kids, performed in Norway were used, including data from 601 children and their parents. Using mixed models, we found a decrease in dysregulation of emotions ($\Delta = .06$, CI = (.00 to .11), $p = .040$) and an increase in emotion regulation ($\Delta = .11$, CI = (.05 to .17) $p < .001$) in the intervention group compared to the control group. The EMOTION intervention has a potential positive effect on children's emotional regulation skills. One opportunity in transdiagnostic interventions lies in targeting common underlying processes in internalizing disorders and thereby reaching a larger proportion of the youth population than is possible with single-disorder approaches.

Keywords: Emotion Regulation – Youth – Transdiagnostic – Internalizing symptoms - Prevention

Emotion regulation is the ability to alter an emotion in accordance with the situation and the individual's goal. The acquisition of such skills increases throughout childhood and adolescence (Gross, 2013; Thompson & Goodman, 2010). Deficits in emotion regulation are suggested to play an etiological role in the development of a range of disorders, perhaps most notably internalizing disorders such as anxiety and depression (Compas et al., 2017; Huberty, 2012; Schäfer, Naumann, Holmes, Tuschen-Caffier, & Samson, 2017). Anxiety and depression are highly prevalent and comorbid in youth (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), and the symptoms are associated with negative consequences in numerous life-areas (Gonzalez-Tejera et al., 2005; Swan & Kendall, 2016). Given the pivotal role of successful modulation and coping with difficult emotions, many efforts to prevent and treat internalizing disorders in young people target their emotion regulation skills (Ehrenreich-May et al., 2017; Izard et al., 2008; Myles-Pallister, Ehassan, Rooney, & Kane, 2014). However, studies typically measure the alleged outcome of improved emotion regulation, such as symptoms of anxiety and depression, and not the regulating skills themselves. In fact, it is not currently known whether efforts to prevent and treat anxiety and depression in school-age children are indeed successful in enhancing one of the alleged causal mechanisms: emotion regulation.

Emotion regulation is “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features to accomplishing ones goal” (Thompson, 1994, pp. 27-28). The association between emotion regulation and internalizing symptoms is grounded in both developmental theory and empirical research. Symptoms of anxiety or depression are limited to dysregulation of specific emotions, primarily sadness or fear (American Psychiatric Association, 2013), whereas emotion regulation is a basic human characteristic that includes attempts to regulate all emotions (Gross, 2013). Thus, emotion regulation is a broader construct. Humans have numerous strategies to regulate their emotions, and several strategies have been associated with internalizing symptoms in youth. For example, acceptance, problem solving and cognitive reappraisal are categorized as adaptive strategies that buffer against internalizing symptoms. Conversely, rumination, avoidance and suppression are categorized as maladaptive emotion regulation strategies that increase the risk of symptom development (Schäfer et al., 2017).

Developmental theories explain how the integration of language, cognition and emotions in development increases children's emotion regulation skills. If this development is maladaptive, due for example to inadequate socialization, it leaves the child less capable of regulating his/her emotions and at risk of

developing internalizing symptoms (Izard, Fine, Mostow, Trentacosta, & Campbell, 2002). The pathways from regulation difficulties to internalizing symptoms are believed to result from a failure to downregulate negative and unwanted feelings in the presence of stressful events. A downward spiral develops when unsuccessful emotion regulation increases negative feelings, which are in turn more challenging to downregulate (Barlow, Allen, & Choate, 2004; Kovacs & Lopez-Duran, 2012). Empirical support for the role of emotion regulation in internalizing psychopathology in children and adolescents is growing (Compas et al., 2017; Schäfer et al., 2017). For example, emotional dysregulation has been linked to the development of anxious symptoms in youth (Schneider, Arch, Landy, & Hankin, 2016). Kovacs, Joormann, and Gotlib (2008) reported an association between emotion dysregulation and depression in children. Regulation by suppression has been linked specifically to anxious symptoms, and low use of reappraisal has been linked to depressive symptoms in adolescents (Eastabrook, Flynn, & Hollenstein, 2014). In a longitudinal study of adolescents, emotion regulation deficits were identified as risk factors for psychopathology, while the inverse relationship, psychopathology predicting deficits in emotion regulation, was not confirmed (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011). Developmentally sensitive interventions focusing on emotion regulation have the potential to reduce psychopathology by boosting adaptive emotional understanding and regulation. Therefore, programs to prevent internalizing difficulties in children might benefit from targeting emotion regulation skills (Izard et al., 2002). Different programs teach children similar strategies to improve emotion regulation and thereby reduce symptoms of anxiety and depression. These strategies include cognitive restructuring, relaxation training, and learning about the negative consequences of using avoidance as a regulation strategy (Bilek & Ehrenreich-May, 2012; Ehrenreich-May et al., 2017; Myles-Pallister et al., 2014). The goal in these and similar programs is to change or modulate emotional reactions in a developmental, adaptive manner, essentially emotion regulation. However, with the majority of these programs, the outcomes measured in treatment trials focus on symptoms rather than on emotion regulation.

Emotion regulation is assumed to be one of the important underlying transdiagnostic mechanisms in internalizing symptomatology. Transdiagnostic in this sense means that the programs are targeting common underlying mechanisms, that the interventions are flexible enough to target various symptom categories and disorders, and that they are based on a theory explaining diverse problems with one or several shared mechanisms (Ehrenreich-May & Chu, 2014; Werner & Gross, 2010). Cognitive behavioral therapy (CBT) fits these criteria and is thereby appropriate for a transdiagnostic intervention (Ehrenreich-May & Chu, 2014; Werner & Gross, 2010). Crossover effects between interventions targeting anxiety and depression separately

further support the notion that internalizing symptoms can be successfully targeted with a transdiagnostic approach (Garber et al., 2016; Stockings et al., 2016). Transdiagnostic preventive interventions for youth with internalizing problems yielded promising results regarding symptom reduction, both in child-focused and family-focused programs (Ahlen, Breitholtz, Barrett, & Gallegos, 2012; Ehrenreich-May et al., 2017; Yap et al., 2016).

Transdiagnostic interventions have the advantage of reaching more children due to the inclusion of children with comorbid symptoms, thereby increasing the availability of evidence-based interventions for children. In addition, having one treatment manual targeting a broader spectrum of symptoms eases adoption and implementation in that health professionals need to be trained in only one program applied to a broad population (Ehrenreich-May & Chu, 2014). Notably, research regarding underlying transdiagnostic processes in intervention studies, such as emotion regulation, are lacking.

The newly developed CBT-based transdiagnostic prevention program EMOTION (Kendall, Stark, Martinsen, O'Neil, & Arora, 2013; Martinsen, Kendall, Stark, Rodriguez, & Arora, 2014) targets internalizing symptoms and focuses on improving children's emotional regulation skills, psychoeducation, behavioral activation, cognitive restructuring, building of a problem hierarchy and gradual exposure to feared or avoided situations. The EMOTION program is therefore suitable for studying potential changes in the underlying mechanism of emotion regulation. The program encompasses 20 group sessions over 10 weeks and includes sessions with parents. In the beginning of the EMOTION program, children learn to recognize and label emotions, identify how emotions are expressed bodily, and practice relaxation skills. Initial strategies learned in EMOTION are the following: "do something fun, or try something new", "do something relaxing", "do something where you use your energy", "talk to someone" and "think less negatively and more positively". These strategies are introduced to the children, and there is then discussion of which strategies are suitable for each child's individual goals. When a child succeeds in changing his/her mood using one of the strategies, the group leader encourages the child to identify other situations where the same strategy could be useful, prompting the child to generalize their new emotion regulation abilities (Martinsen, Kendall, et al., 2014). In addition to the strategies described above, regulation of emotions is a recurrent theme throughout the EMOTION program. For example, children learn cognitive restructuring: a strategy to change how to interpret a situation (Martinsen, Kendall, et al., 2014). By changing an interpretation from "the other children turned away from me, which means they don't like me" to "the other children turned away from me; it must mean there is something interesting going on outside the windows", the child's emotional reaction changes from sad to

interested (Izard 2002). Emotion regulation strategies are also prominent in the EMOTION program's parent sessions. Parents learn about these strategies and are encouraged to support the children in the use of their newly acquired emotion regulation skills (Martinsen, Stark, Rodriguez, Kendall, & Arora, 2014).

In this study, we investigated whether EMOTION improves emotion regulation among Norwegian children aged 8 to 12 years who are reporting elevated levels of internalizing symptoms. To account for the normal development of emotion regulation in children (Thompson & Goodman, 2010) and for possible gender differences (Neumann, van Lier, Gratz, & Koot, 2010), we controlled for child age and gender. We hypothesized that emotion regulation would improve more in the intervention group than in the control group in the Coping Kids study. To the best of our knowledge, the effect on emotion regulation skills of a CBT intervention targeting internalizing symptoms has not previously been investigated in school-age children.

Method

Participants.

In the Coping Kids study, the data collection was performed in three regions across Norway. Thirty-six schools volunteered to participate, and they were then matched and randomly divided into 18 control and 18 intervention schools.

After sending invitations to all families with children in grades three to five (aged 8 – 12 years), 1692 children were screened for anxious and depressive symptoms (see figure 1, CONSORT statement). Of these, 873 were included in the study based on their scoring 1 SD or above a population-based mean on the Multidimensional Anxiety Scale for Children (MASC) (March, Parker, Sullivan, Stallings, & Conners, 1997) and/or the Mood and Feeling Questionnaire – Short Form (SMFQ) (Angold, Costello, Messer, & Pickles, 1995). After screening, seven children were excluded due to certain criteria (mental retardation, autism, not potentially benefiting from group intervention), and 71 children were randomly excluded due to limited study resources (lack of additional group leaders when the maximum group size of seven children was reached). Thus, 795 children were ultimately included in the Coping Kids study, and 601 of these children had at least one parent participating (80% were mothers). When both parents participated in the study, one parent registered as number one and the other as number two. In this study, we used only the data from parents registered as number one.

The children with and without parental participation in the study did not differ significantly in age ($p = .501$) or symptom level (MASC: $t = -.35, p = .891$. SMFQ: $t = .43, p = .701$). We were unable to test for potential differences in sociodemographic data and emotion regulation because these parameters were reported only by the parents.

Norway was reported as the birthplace of 90.7% of the children, 84.5% of the mothers and 83.9% of the fathers.

Eighty percent of the parents in our study reported their own age as between 37 and 51 years. Seventy-one percent of the parents reported education at the college/university level. In the corresponding age groups in the Norwegian population, between 36% and 49% have education at the college/university level (Statistics of Norway, 2017). Fifty-four percent reported an annual income above 501,000 NOK (Norwegian kroner). In the general Norwegian population, the median annual income is 491,000 NOK (Statistics of Norway, 2016) .

Procedures.

The data used in the present study were from a Norwegian study, Coping Kids (Patras et al., 2016). Coping Kids is a RCT evaluation of the new indicated group-based prevention program EMOTION.

Data collection was performed in five waves between fall 2014 and spring 2016, with new children joining the project every semester (see figure 1, CONSORT statement). Pre-intervention data were collected at the start of each semester, and post-intervention data were collected immediately after intervention. Participation in screening required both expressed interest from the child and written consent from a caregiver on behalf of the child due to their status as minors.

The EMOTION program is a 10-week CBT-based program delivered in a group format twice per week. The first half of the program focuses mainly on teaching children new skills to manage symptoms of anxiety and depression, for example emotion regulation. In the second half, the focus is on practicing these skills in addition to behavioral experiments relating to exposure and behavioral activation and working on enhancing self-esteem. The main target areas in EMOTION are psychoeducation, emotion regulation skills, behavioral activation, building a fear hierarchy and exposure tasks (Martinsen, Kendall, et al., 2014). The feasibility of the EMOTION intervention was tested in a pilot study, and positive results were reported (Martinsen, Kendall, Stark, & Neumer, 2016).

Three to seven children participated in each group. Health professionals from diverse regular primary-care settings led each EMOTION group. The group leaders received a three-day training in basic CBT

understanding and the EMOTION manual. A CBT-trained therapist supervised and held regular meetings with the group leaders at each site. Half-day seminars were held at the control schools and intervention schools with the goal of increasing knowledge about children presenting with internalizing symptoms and ways to support them at school.

Insert figure one, Consort Statement

Measures

The caregivers reported the children's emotion regulation before and after the intervention using the Emotion Regulation Checklist (ERC) (Shields & Cicchetti, 1997). The ERC measures children's general emotion regulation capacities and consists of 23 questions divided into two subscales. The results are presented as mean item scores. The liability/negativity (L/N) subscale measures inflexibility, liability and dysregulation and consists of 15 questions with a total score ranging from zero to 45 ($\alpha = .72$ at T1 and $.81$ at T2). On the L/N subscale, higher scores indicate greater dysregulation. The emotion regulation (ER) subscale measures positive emotion regulation behavior and capacities, appropriate emotional expression, empathy and emotional self-awareness. The ER subscale consists of eight questions with a total score ranging from zero to 24 ($\alpha = .72$ at T1 and $.81$ at T2). On the ER subscale, lower scores indicate greater dysregulation. Shields and Cicchetti (1997) demonstrated construct and discriminant validity of the ERC with the two subscales. The ERC questionnaire is based on the view that emotion regulation capacity is a considerably stable construct (Compas et al., 2017). The items in the ERC checklist focus on children's behaviors that are observable by their parents. Examples of these items are "Is easily frustrated", "Is prone to angry outburst/tantrums easily", and "Is a cheerful child" (Shields & Cicchetti, 1997).

Data Analyses

The two ERC subscales were analyzed using two mixed models, one for each subscale. The child was included as a random effect, and time (after versus before intervention), age, and gender were covariates. We used mixed models with children nested within the schools and the school as a second random effect, which yielded essentially the same results (data not shown). The mixed models included data from all the participants with data from at least one time-point in the analysis.

In the Coping Kids study, randomization was performed at the school level and only in the first wave of data collection. Due to feasibility considerations, each school was either an intervention or a control school

throughout the study. Thus, in subsequent waves, the participants knew the randomization group before entering the study. We therefore checked for differences between groups at baseline regarding ERC, age, gender and sociodemographic factors (t-test for scale variables and Pearson's chi-squared test for dichotomous variables) (table one). Completers and drop-outs were compared using Student's t-test. P values < .05 are considered statistically significant, and 95% confidence intervals (CIs) are reported where relevant. Intraclass correlation coefficient (ICC) for the mixed model with child as random effect were calculated for both ERC subscales. The statistical analyses were performed using SPSS 24.

Results

Table one shows the baseline characteristics of the intervention and control groups. **Insert table one**

There were no statistically significant differences between the two groups regarding parent education, family income, or parent gender. The children in the intervention group were older than those in the control group ($M_{\text{intervention}} = 10.18$ [SD .94] versus $M_{\text{control}} = 10.01$ [SD .86], $t = 2.30$, $p = .022$), and there were more girls in the intervention group ($M_{\text{intervention}} = 170$ [62.5%], $M_{\text{control}} = 176$ [55.2%], $p = .043$). Although statistically significant, these small age and gender differences were not considered clinically important. The children in the intervention group rated lower on the positive ER subscale of the ERC at baseline than did the control group: $M_{\text{intervention}} = 2.31$ [SD .40] versus $M_{\text{control}} = 2.41$ [SD .41], $t = 2.97$, $p = .003$. The two groups did not differ significantly on the L/N subscale at baseline: $M_{\text{intervention}} = .79$ [SD .41] versus $M_{\text{control}} = .74$ [SD .40], $t = 1.32$, $p = .189$.

Of the $n = 601$ cases included in the analytic sample, $n = 591$ cases yielded data for the ERC variables at any measurement time ($n = 383$ cases yielded data at both time points, $n = 174$ cases yielded data only at the pre-intervention baseline, and 34 yielded only post-intervention data). Comparisons between the 383 completers and the 174 drop-outs regarding the two ERC subscales indicated no statistically significant differences: L/N: $t = .013$, $p = .990$; ER: $t = .589$, $p = .205$.

Table two shows the results of the mixed model analyses with the child as a random effect and time (after versus before intervention) as a covariate. **Insert table two**. The mean L/N score of the intervention group decreased more than that of the control group: $\Delta = .06$, CI = (.00 to .11), $p = .040$. The mean ER score of the intervention group increased, while that of the control group decreased: $\Delta = .11$, CI = (.05 to .17), $p < .001$. We repeated all the analyses with SES data (education and income) as covariates, but the results did not change

substantially (results not shown). Table 3 shows effect and significance of all covariates in the two mixed model analyses. **Insert table three.**

For ERC L/N, the variance components were: between child variance 0.1232, residual variance 0.0369. $ICC = 0.1232 / (0.1232 + 0.0369) = 0.77$. For ERC ER: between child variance 0.117, residual variance 0.044, $ICC = 0.73$.

Insert figures 2 and 3

Discussion

Many programs are designed to enhance emotion regulation skills to target anxiety and depression in youth (Bilek & Ehrenreich-May, 2012; Ehrenreich-May et al., 2017; Myles-Pallister et al., 2014). However, it is unknown whether such programs actually improve children's emotion regulation. We therefore investigated whether the newly developed transdiagnostic indicated preventive program EMOTION (Martinsen, Kendall, et al., 2014) improved children's emotion regulation skills as reported by their parents.

Among our sample of children, based on self-reported elevated anxious and/or depressive symptoms, the EMOTION intervention did have a positive effect on emotion regulation skills. The results indicate that emotion regulation is changeable through a CBT-based prevention intervention. Although there are no studies investigating this type of intervention in youths, our results are consistent with previous studies of comparable intervention programs in adults showing promising effects (Gratz, Weiss, & Tull, 2015).

In the present study, improvement in emotion regulation was higher in the intervention group than in the control group, suggesting that improved emotion regulation was not merely a consequence of the normal development of emotion regulation capacities. One possible contributor to the positive effect is that children participating in the EMOTION groups receive the opportunity to practice emotion regulation in a safe, supporting environment. One such opportunity is the "false test" task: the children are told by their group leader that they will take a test to see if they have paid attention in the previous group sessions. After the children describe how they feel about the test, the group leader reveals that there is no test. This false test induces mild anxiety in children, and the group practices in vivo downregulation of this feeling. In-session emotion activation and regulation are similarly an important part of the Emotion Based Preventive Intervention EDP program (Izard et al., 2008) for pre-school children, which focuses on emotional skills and has shown positive results.

Repeated failure to regulate strong negative emotions and the following strengthening of the unwanted emotions might over time accumulate and develop into internalizing symptoms (Barlow et al., 2004; Kovacs & Lopez-Duran, 2012). In accordance with this theory, the improvement in emotion regulation post intervention in our study should make the children better equipped to handle negative and uncomfortable emotions in the future and thereby reduce stress on their emotion regulation systems. Thus, the child could have a decreased risk of developing full-blown internalizing disorders (Ehrenreich-May et al., 2017; Huberty, 2012). The results of the present study show an increase in positive emotion regulation after the intervention and a decrease in dysregulation. Similarly, Schäfer et al. (2017) found that reduced dysregulation and increases in adaptive regulation are associated with a reduction in internalizing symptoms in youth. Increases in positive emotion regulation further support the notion that the EMOTION intervention was helping the children build adaptive skills of emotion regulation (Huberty, 2012). Adequate emotion regulation is associated with adaptive development in children in areas such as social competence (Penela, Walker, Degnan, Fox, & Henderson, 2015) and academic achievement (Djambazova-Popordanoska, 2016). Correspondingly, emotional dysregulation has been found to predict psychopathology in adolescents (McLaughlin et al., 2011) and has been linked specifically to the development of anxiety and depression (Kovacs et al., 2008; Schneider et al., 2016), supporting the notion that reducing dysregulation and the use of maladaptive emotion regulation strategies are important in the prevention of internalizing disorders in youth.

Internalizing symptoms are characterized by dysregulation of specific emotions (American Psychiatric Association, 2013; Kovacs et al., 2008), and emotion regulation could theoretically be an effect of symptom reduction. However, the ERC questionnaire used in our study assumes that emotion regulation is a highly stable construct (Compas et al., 2017) in addition to covering a broad range of emotions (Shields & Cicchetti, 1997). In contrast, symptom measurements often focus on evaluating abnormality during a limited time period (Angold et al., 1995; March et al., 1997), indicating that symptoms are fluctuating. Thus, when parents view their child as better at regulating their emotions after the intervention, this improvement may indicate a more general improvement in emotion regulation in addition to a specific reduction of internalizing symptoms.

Strengths of the current study include the participation of 36 schools representing different areas of Norway, which provided a national sample. The low number of exclusion criteria ensured a diverse sample. The diversity of group leaders, the group leaders' different levels of knowledge of the CBT approach prior to the study, and the implementation in naturalistic school settings provided ecological validity. Because inclusion was based on elevated symptoms of anxiety and/or depression, our results are not generalizable to the entire

population. We cannot state that the results of the present study were due exclusively to the intervention, because there were differences between the intervention and control groups at baseline. The results should therefore be interpreted with caution. In our study, only parents reported their children's emotional regulation. In future studies, multiple reporters and more-objective observations and assessments of emotion regulation over a longer time period would be preferable (Hourigan, Goodman, & Southam-Gerow, 2011).

Our results indicate that the EMOTION intervention has a potential positive effect on children's emotion regulation capacities. Improved emotion regulation has clinical importance in that it potentially better equips the child to cope with difficult emotions in the future and thus lowers the risk of the child developing internalizing disorders. Investigations of other outcomes in addition to symptoms measurement are essential to understand the full range of the preventive effects of intervention programs such as EMOTION. Further longitudinal studies should be conducted to explore the underlying mechanisms that drive the effect of transdiagnostic interventions on emotion regulation.

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Table 1. Descriptive, baseline. Mean (SD) or n (%). (N = 591)

	Intervention group (n= 272)	Control group (n= 319)	P value
Child age	10.18 (.94)	M 10.01 (.86)	.022
Child female	170 (62.5%)	176 (55.2%)	.043
Parent mother	217 (79.8%)	251 (78.7%)	.159
ERC ER	2.31 (.40)	2.41 (.41)	.003
ERC L/N	0.79 (.41)	0.74 (.40)	.189
Education	4.12 (.94)	4.14 (.96)	.779
Income	3.69 (1.18)	3.71 (1.19)	.842

**T*-test for scale variables, Pearson`s chi-squared test for dichotomous variables

Note: Income is reported per family and scored on a 5-point scale, 1 = 350000 NOK, 5 = over 1 million NOK (Norwegian kroner). Education is reported individually for parents and scored on a 5-point scale, 1 = ten years of primary/secondary school, 5 = four or more years of college/university.

Table 2. Results from mixed model analyses with ERC L/N and ERC ER as dependent variables. Child as random effect. <https://doi.org/10.1007/s10826-018-01324-1>

Intervention, time (after versus before intervention), interaction between intervention and time, child age and child gender as covariates.

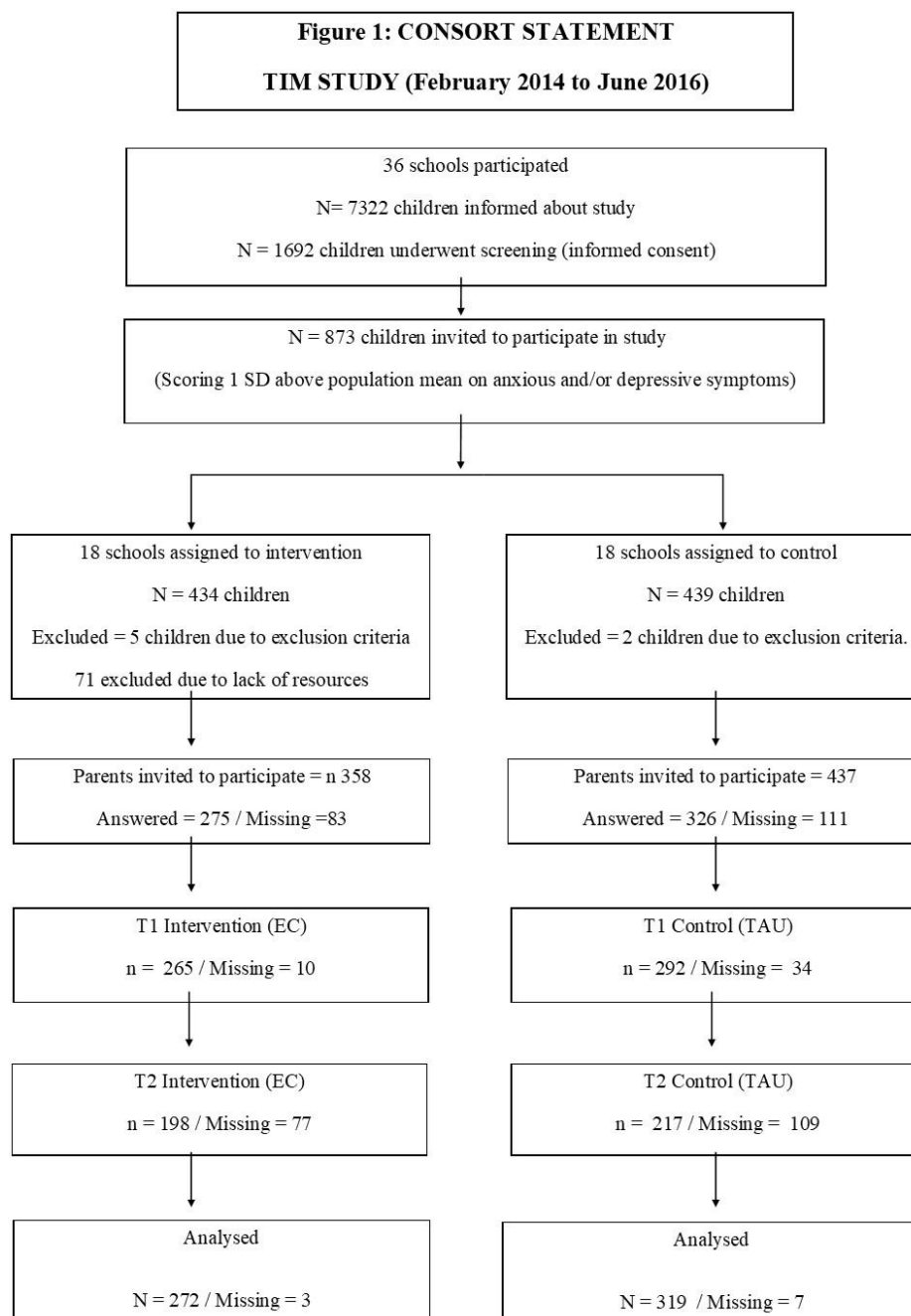
Time	Measurement	Intervention group		Control group		Difference (interaction between group and time)	
		N	Mean (SE)	N	Mean (SE)	Estimate (95% CI)	P value
Baseline	ERC L/N	265	.79 (.03)	292	.74 (.02)		
	ERC ER	265	2.30 (.03)	292	2.41 (.02)		
Post intervention	ERC L/N	192	.70 (.03)	225	.70 (.03)	.06 (.00 to .11)	.040
	ERC ER	192	2.40 (.03)	225	2.39 (.03)	.11 (.05 to .17)	< .001

Note: ERC L/N = Liability/negativity, higher score indicates greater dysregulation. ERC ER = Emotion regulation, lower score indicate greater dysregulation.

Table 3. Effect and significance of all covariates in the mixed model analyses with ERC L/N and ERC ER as dependent variables.

	ERC L/N		ERC ER	
	Coefficient	P value	Coefficient	P value
Time	-0.039	0.039	-0.019	0.346
Intervention	0.047	0.172	-0.106	0.002
Time x Intervention	-0.056	0.040	0.112	0.000
Female	0.000	0.994	0.076	0.021
Age	-0.010	0.572	-0.000	0.994

Note: ERC L/N = Liability/negativity, higher score indicates greater dysregulation. ERC ER = Emotion regulation, lower score indicate greater dysregulation.



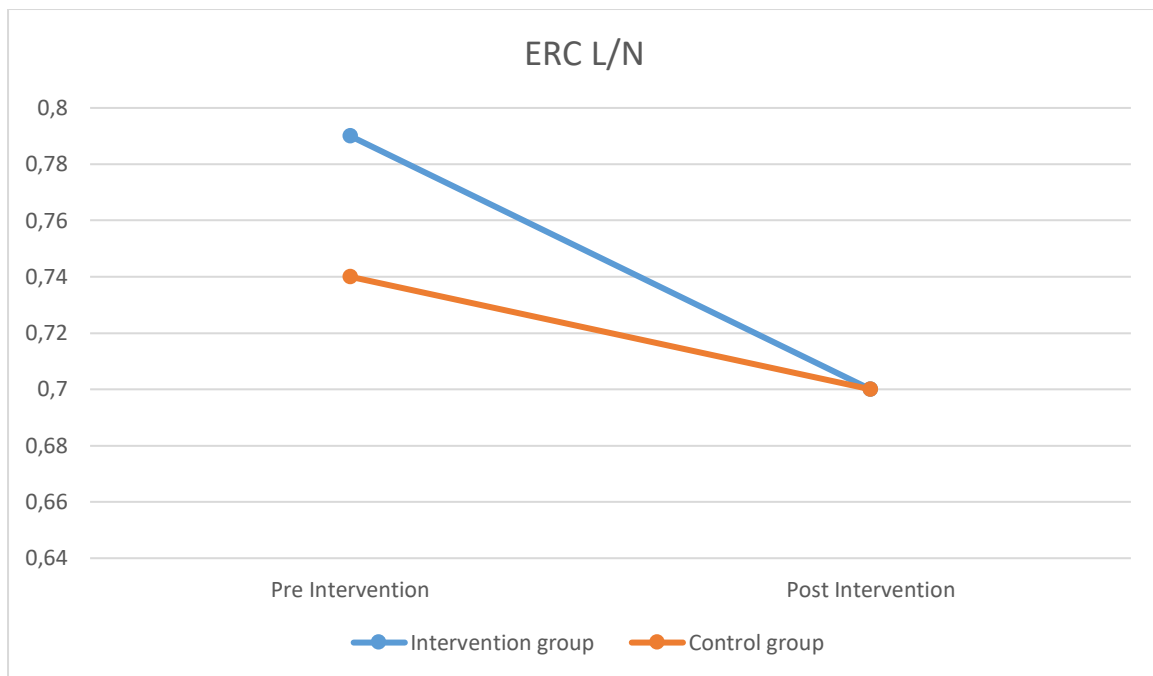


Figure 2: ERC L/N Mean item scores, pre- and post-intervention, separated by group. ERC L/N = Emotion Regulation Checklist, liability/negativity subscale. Higher score indicates greater dysregulation.

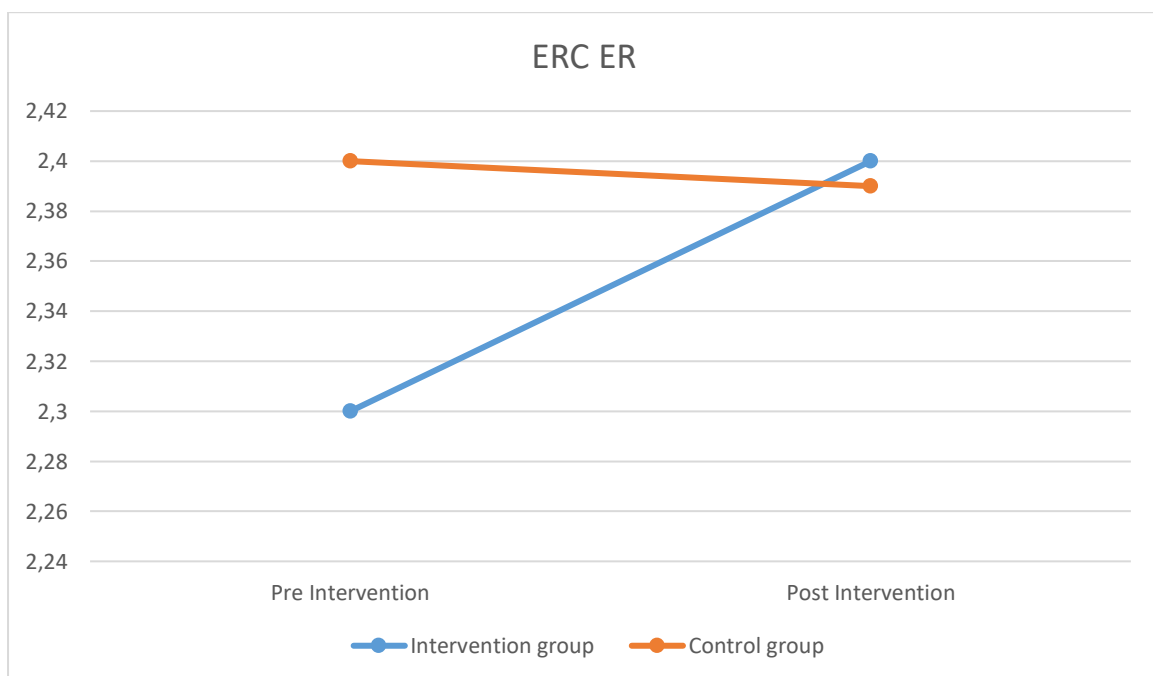


Figure 3: ERC ER mean item scores, pre- and post-intervention, separated by group. ERC ER = Emotion Regulation Checklist, emotional regulation subscale. Lower score indicates greater dysregulation.