



## Emotion dysregulation and anxiety in children and adolescents: Gender differences

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### ABSTRACT

An increasing number of studies has shown that emotion dysregulation plays a key role in relation to childhood anxiety. While gender differences are commonly associated with emotional competence, no study has yet examined whether the relation between emotion dysregulation and anxiety is the same for girls as it is for boys. The present study investigated the possibility of gender differences in the relation between emotion dysregulation and anxiety in a community sample of 544 children and adolescents (298 girls and 246 boys) in the age of 9–16 years. Anxiety was assessed using the Screen for Child Anxiety Related Emotional Disorders-Revised (SCARED-R). Emotion dysregulation was measured by the Difficulties in Emotion Regulation Scale (DERS). Four results emerged from this study. In accordance with previous research, (1) girls experience more anxiety and greater difficulties regulating their negative emotions than boys, and (2) emotion dysregulation has a significant impact on anxiety. Not previously shown, (3) emotion dysregulation is more predictive of anxiety in girls than in boys, and (4) different types of emotion regulation difficulties account for anxiety in girls and boys. Participants' age did not have an impact on anxiety scores. Findings are discussed with respect to clinical implications and future directions.

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### 1. Introduction

The link between anxiety and emotion dysregulation has become increasingly apparent within the literature (e.g., Stegge & Meerum Terwogt, 2010). For example, research has shown that children with anxiety exhibit greater difficulties employing contextually effective emotion regulation strategies, as well as lower emotion regulation self-efficacy than their non-anxious counterparts (Carthy, Horesh, Apter, & Gross, 2010). Conceptualizations have been put forth, which consider anxiety disorders to be characterized by essentially emotional distress (Barlow, 1991) and an inability to elicit adaptive or inhibit maladaptive responses (Thayer & Lane, 2000). In line with this, it has been proposed that emotion dysregulation may play a key role in the etiology of anxiety disorders (Cisler, Olatunji, Feldner, & Forsyth, 2010). Weems (2008) argues that childhood anxiety, regardless of DSM-subclassification, may be best conceptualized as being primarily a dysregulation of anxiety responses (e.g., disabling worry that does not serve the anticipation of real future dangers, or intense fear in the absence of true threat), as well as general negative affect (e.g., the experience of “negative emotions”, being upset or concerned).

A recent development within the literature on childhood anxiety constitutes the increasing interest in gender differences across the various aspects of the disorder (Zahn-Waxler, Shirtcliff, &

Marceau, 2008). Some remark that research investigating gender differences in the prevalence of childhood anxiety has produced mixed results (Feng, Shaw, & Silk, 2008). However, a number of studies have shown a higher frequency and intensity of anxiety symptoms in female respondents, and so others argue that anxiety problems, even at an early age, are more common in girls than in boys (Zahn-Waxler et al., 2008). Given the link between anxiety and emotion dysregulation, this may point to the possibility that girls have greater difficulties regulating their negative emotions than boys. Indeed, recent research has shown that female adolescents indicate greater emotional non-acceptance, lower emotional clarity, less access to effective emotion regulation strategies, as well as greater difficulties engaging in goal-oriented behavior when experiencing distress than male adolescents (Neumann, van Lier, Gratz, & Koot, 2010).

Very recently, Zlomke and Hahn (2010) investigated the relation between cognitive emotion regulation strategies and anxiety in adults and found that strategies involving rumination and catastrophizing were predictive of worry in both male and female participants. However, a number of other cognitive strategies were gender-specific in their relation to worry and anxiety. For males only, increased attention to and thinking about how to handle negative events was related to lower levels of anxiety and worry. Strategies involving acceptance of emotions and positive reappraisal were related to lower levels of worry in female adults only. This suggests that different cognitive emotion regulation strategies may be helpful to men and women, respectively, when experiencing anxiety-provoking emotional responses.

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Considering these findings from the adult literature, we asked whether the relation between emotional dysregulation and anxiety, observed in both children and adolescents, would reveal gender differences, as well. It is important to note that the term emotion dysregulation in the present study does not refer to specific regulatory strategies. Although some strategies, such as suppression and rumination have been found to relate to anxiety (Amstadter, 2008), it can be argued that specific emotion regulation techniques are not adaptive or maladaptive per se. Rather, excessive reliance on singular techniques, as well as an inability to elect strategies consistent with the particular circumstances of a given emotional response may be considered a dysregulation of emotion (Gratz & Roemer, 2004).

In summary, this study addressed the following questions. Can the impact of emotion dysregulation on anxiety be replicated in the present sample of typical children and adolescents? Can the finding that girls report more anxiety, as well as greater difficulties regulating their negative emotions than boys be replicated in the current study? And especially, what is the impact of gender on the relation between emotion dysregulation and anxiety in children and adolescents?

## 2. Method

### 2.1. Participants

Participants were 544 children and adolescents (298 girls and 246 boys) in the age of 9–16 years (*mean age* = 12.24 years, *SD* = 1.68). The representation of the individual ages varied: eight 9-year-olds, 93 10-year-olds, 103 11-year-olds, 117 12-year-olds, 77 13-year-olds, 78 14-year-olds, 65 15-year-olds, and three 16-year-olds. Participants were recruited from Danish public schools (4th–9th grade) as part of another study (Esbjørn, Reinholdt-Dunne, Caspersen, Christensen, & Chorpita, submitted for publication). For all youths, informed consent was acquired from their parents. All youths included in the analysis (1) were fluent in Danish, (2) were considered typically developing children and adolescents by their parents, and (3) came from middle to upper-middle class socioeconomic backgrounds.

### 2.2. Procedure

Parents received information letters about the study, distributed to them by participating schools. On the day of testing, youths gave verbal assent to participation in the study and completed a questionnaire pamphlet containing a fixed series of questionnaires. Members of the research team were available for assistance at all times. When participants had finished, they were thanked for their help and received a small token of appreciation. At any time, youths who no longer wished to partake in the study were thanked for their participation and returned to their usual classrooms. All testing was carried out at participants' own schools.

### 2.3. Measures

All questionnaires had been translated into Danish using a translation back-translation procedure.

#### 2.3.1. Screen for Child Anxiety Related Emotional Disorders-Revised (SCARED-R)

The SCARED-R (Muris, Merckelbach, Schmidt, & Mayer, 1998; Muris & Steerneman, 2001) is a self-report instrument, assessing different types of DSM-IV (American Psychiatric Association, 1994) related anxiety disorders in children. Subscales provide in-

dices for (a) separation anxiety disorder, (b) panic disorder, (c) animal phobia, (d) blood phobia, (e) situational phobia, (f) social phobia, (g) obsessive-compulsive disorder, (h) post traumatic stress disorder, and (i) generalized anxiety disorder. The SCARED-R consists of 66 items assessing the frequency, with which children experience phenomena described by the individual items on a 3-point Likert scale (1 = almost never; 2 = sometimes, and 3 = often). The SCARED-R has previously shown good internal consistency (Muris et al., 1998; Muris & Steerneman, 2001). Cronbach's alpha was .85 for the SCARED-R total score in the present sample of children and adolescents. Scores were not calculated at the subscale level, as research suggests that the nine subscales of the SCARED-R may be best interpreted as a one-factor solution when applied to non-clinical populations (Muris et al., 1998). Confirmatory factor analyses (CFA's) were carried out, using Mplus (version 6), which confirmed an acceptable model fit for the one-factor solution ( $\chi^2 = 123.70$ ,  $df = 27$ ,  $p < 0.000$ ; CFI = 0.94; SRMR = 0.04).

#### 2.3.2. Difficulties in Emotion Regulation Scale (DERS)

The DERS (Gratz & Roemer, 2004) is a 41-item self-report instrument, which assesses emotion dysregulation. The frequency with which the various items apply to the respondent is indicated on a 5-point Likert scale, ranging from 1 (almost never) to 5 (almost always). The DERS consists of the following six subscales: (a) lack of awareness of emotional responses (e.g., "I pay attention to how I feel"), (b) lack of clarity of emotional responses (e.g., "I know exactly how I am feeling"), (c) non-acceptance of negative emotional responses (e.g., "When I'm upset, I become angry at myself for feeling that way"), (d) limited access to emotion regulation strategies perceived as effective (e.g., "When I'm upset, I know that I can find a way to feel better"), (e) difficulties controlling impulses when experiencing negative emotions (e.g., "When I'm upset, I have difficulty controlling my behavior"), and (f) difficulties engaging in goal-directed behavior when experiencing negative emotions (e.g., "When I'm upset, I have difficulty thinking about anything else"). The DERS has recently been validated with adolescents in the age of 11–17 years and shown good internal consistency (Neumann et al., 2010). Cronbach's alpha in the current study was .98 for the DERS total score (subscale alphas ranged from .85 to .95).

### 2.4. Missing data

Of the original sample of 693 children and adolescents who responded to both measures of interest, 57 participants were excluded from the analysis because no data regarding gender had been obtained. Of the remaining 636 participants, another 59 children were excluded as participants' age was unknown, resulting in a potential sample of 577 participants for this study. Missing data on individual questionnaire items were handled by utilizing the expectation-maximization algorithm in SPSS 17. The algorithm produced subscale scores for all participants on the DERS missing less than 50% of items on a given subscale. Likewise, the algorithm was used to produce total scale scores on the SCARED-R for all participants missing less than 50% of items on any SCARED-R subscale. This procedure resulted in a final sample of 544 children and adolescents (hereafter referred to as the "total sample"). The resulting mean scores and standard deviations for all study variables did not differ significantly from the scores obtained from the original dataset when performing complete case analyses (these were based solely on participants who provided answers to all measures of interest and did not have any missing items on any questionnaire subscales;  $n = 308$ ).

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