



# The importance of distinguishing between the different eating disorders (sub)types when assessing emotion regulation strategies



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## ABSTRACT

People with eating disorders (ED) have difficulties regulating their emotions adaptively. Little is known about differences and similarities between different types of ED and how these regulation difficulties relate to other emotional problems. The present study examines maladaptive (suppression) and adaptive (cognitive reappraisal) emotion regulation strategies in women with different ED and relationships with anxiety and depression levels. In 32 women with AN restrictive subtype (ANR), 32 with AN binge-purge subtype (ANBP), 30 with bulimia nervosa (BN), 29 with binge eating disorder (BED), and 64 healthy women, the ERQ (emotion regulation) as well as STAI-T (anxiety), BDI-SF (depression), and EDDS (eating pathology) were administered. Women across different ED subtypes were inclined to suppress emotions and lacked the capacity to reappraise emotions (except women with ANBP). Correlational relations of suppression and reappraisal with anxiety and depression levels differed across ED groups. Emotion regulation problems were found across ED subtypes. However, the types of emotion regulation problems, and the effect of coexisting other emotional problems such as anxiety and depression may differ across ED subtypes. These findings illustrate the importance to of considering ED subtypes in emotion regulation research rather than consider ED as a whole.

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## 1. Introduction

Emotions play an important role in the course and treatment of individuals with eating disorders (ED). Individuals with ED particularly experience difficulties regulating their emotions, as they do not seem able to use adaptive emotion regulation strategies (e.g., Harrison et al., 2010; Svaldi et al., 2012). It is even suggested that pathological eating behavior may result from maladaptive emotion regulation (Smyth et al., 2007; Danner et al., 2012; Racine and Wildes, 2013).

Research has shown that individuals with ED are inclined to use maladaptive emotion regulation strategies (in particular emotion suppression). The more they employ these maladaptive strategies, the more severe their ED symptoms seem to be (Forbush and Watson, 2006; Aldao et al., 2010; Harrison et al., 2010). Recent studies also suggest that individuals with ED lack access to more adaptive emotion regulation strategies (Aldao et al., 2010; Danner et al., 2012; Svaldi et al., 2012). This inability to regulate emotions adaptively makes them use emotion regulation

strategies that they do have access to, leading to highly inefficient consequences/behavior, such as bingeing or other disordered eating, hoping to alleviate their negative feelings (Heatherton and Baumeister, 1991). Thus, difficulties in emotion regulation might include the presence of maladaptive strategies, the lack of adaptive strategies, or both.

A prototypical example of a maladaptive emotion regulation strategy is the suppression or inhibition of emotions (Gross and John, 2003). It is regarded as a maladaptive strategy, because it decreases the expression of emotions rather than the experience of emotions (e.g., Gross and Levenson, 1997; Gross, 2002). Another downside is that it comes at a certain cost: it involves more physiological arousal and is more demanding than not regulating emotions at all. A prototypical adaptive emotion regulation strategy that is commonly used in daily life is cognitive reappraisal (Richards and Gross, 2000; Gross and John, 2003). It entails changing the way a situation is construed, aiming to decrease its emotional impact. It is regarded an adaptive strategy, as it reduces the negative experience resulting from the emotion without additional costs. It often occurs before an emotional situation and once the situation occurs, its emotional impact reduces.

In conclusion, individuals with ED therefore suffer from both maladaptive emotion regulation and a lack of adaptive emotion regulation strategies. Until now most studies, however, focus on

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only one or two patient groups, such as anorexia nervosa (AN) and bulimia nervosa (BN) (e.g., [Forbush and Watson, 2006](#); [Harrison et al., 2010](#); [Racine and Wildes, 2013](#)), while not much is known about similarity and differences in emotion regulation between different types of ED. Furthermore, relationships with emotional problems such as depression and anxiety, have remained understudied as well. Since mood and anxiety disorders are highly comorbid across ED subtypes (e.g., [Blinder et al., 2006](#); [Hudson et al., 2007](#); [Salbach-Andrae et al., 2008](#)), it is important to gain further understanding of emotion regulation difficulties and relationships with ED pathology. Individuals with ED who experience (severe) symptoms of anxiety and depression may carry a stronger burden by lacking adaptive emotion regulation strategies as they also need to deal with these additional emotions.

Only a few studies have compared individuals across different ED subtypes in terms of emotion regulation strategies. One study showed that women with AN and BN reported more emotion inhibition than control women. However, women with BN reported higher levels of emotional inhibition than women with AN ([Forbush and Watson, 2006](#)). Another study by [Harrison et al. \(2010\)](#), reported similar findings on all subscales of the Difficulties in Emotion Regulation Scale, a scale assessing emotional arousal, awareness, understanding, acceptance of emotions and the ability to act in desired ways regardless of an individual's emotional state ([Gratz and Roemer, 2004](#)). [Svaldi et al. \(2012\)](#) examined emotion regulation strategies in a community sample of people with ED and compared women with AN, BN and BED to other psychiatric diagnostic groups (major depressive disorder and borderline personality disorder) and a healthy control group. They used a variety of instruments to assess emotion regulation difficulties. All ED groups reported to use less adaptive and more maladaptive emotion regulation strategies compared to healthy controls. Furthermore, this study showed positive relationships with eating disorder severity.

However, it remains unclear to what extent restrictive (ANR) and binge-purge (ANBP) subtypes differ, as the existing research on emotion regulation difficulties is scarce and just a few studies distinguished between these subtypes. Yet, such distinction may be pivotal as several studies indicated important characteristic differences between these subtypes (see [Peat et al., 2009](#)). Differences in self-regulatory behavior between ANR and ANBP have also been reported. For example, ANBP patients have less inhibitory control than ANR patients and healthy control participants as is suggested by the higher number of errors on a Go/No Go task ([Bruce et al., 2003](#); [Rosval et al., 2006](#)), and ANBP has been linked to impulsivity such as motor impulsiveness, inattention, reward responsiveness, and impulsive behaviors such as stealing and self injury ([Waxman, 2009](#)). These finding could not be replicated within the ANR group. Comorbid substance use disorder was found more often to be more often present in ANBP (26.7%) than in ANR patients (1.4%; [Salbach-Andrae et al., 2008](#)). Furthermore, individuals with ANBP, and not ANR, seem to share several features with BN as they both have a more impulsive personality, stronger emotional eating tendencies and specifically seem to act more impulsively in response to negative emotions ([Vervaeke et al., 2004](#); [Claes et al., 2005](#)), tendencies that are regarded as regulation strategies to reduce the experience of negative affect. Consequently, individuals with ANBP may resemble individuals with BN in the use of emotion regulation strategies more strongly than they resemble individuals with ANR.

More direct evidence stems from a recent study in AN patients that found direct relations between impulse control difficulties when upset and both objective binge eating and purging behavior in AN patients ([Racine and Wildes, 2013](#)). Findings suggest important differences in the use of emotion regulation between the AN subtypes. In line with these results, an other study

examining cognitive reappraisal in restrictive (ANR) and binge-purge type patients (ANBP and BN) patients showed that the binge-purging group scored lower on cognitive reappraisal in comparison to ANR ([Danner et al., 2012](#)). On the other hand, limited use of cognitive reappraisal was related to depressive symptoms in the restricting group, indicating that emotion and mood issues seem to be related to emotion regulation problems in all types of disordered eating, albeit that the specific relationship may differ between ED (sub)diagnoses. This may have important implications for treatment of individuals with ED.

The first purpose of the present study is to compare the use of maladaptive (suppression) and adaptive (cognitive reappraisal) emotion regulation strategies in women with AN, BN and BED, and to replicate the findings of [Svaldi et al. \(2012\)](#) in a clinical sample (women currently in treatment for their ED). The second purpose is to extend these findings by distinguishing between ANR and ANBP and to examine the correlational relations between the use of adaptive and maladaptive emotion regulation strategies and clinical characteristic directly related to these strategies including levels of anxiety and depression within each subgroup (rather than only across the whole ED group as was done in [Svaldi et al. \(2012\)](#)).

The hypotheses are that all women with ED will show stronger emotion suppression and will lack the tendency to reappraise their emotions compared to healthy control women. Regarding differences between the (sub)types, in line with our previous study in which women displaying binge-purging behaviors had lower cognitive reappraisal scores than the restricting group ([Danner et al., 2012](#)), we expect reappraisal scores to be lower in women with ANBP and BN. In accordance with the findings of [Svaldi et al. \(2012\)](#), no group differences are expected regarding suppression scores. Previous work reported on relations between emotion regulation and affective problems (e.g. depression level) and it is therefore expected that higher anxiety and depression levels will be related to more dysfunctional emotion regulation.

## 2. Method

### 2.1. Participants

One hundred and eighty-seven women participated in this study: 32 women with a diagnosis of AN restrictive subtype (ANR) or eating disorders not otherwise specified (EDNOS) clinically referred to as ANR, 32 women with AN binge-purge subtype (ANBP) or EDNOS clinically referred to as ANBP, 30 women with BN, 29 women with EDNOS-BED subtype, and 64 control women without a history of any psychiatric disorder including ED. All participants were 18 years of age or older (with an age range of 18 to 62 years, Mean=28.31, S.D.=10.61), were fairly educated (most participants completed advanced education (at least bachelor level or applied sciences) or were at present receiving advanced education. Participants were asked to report their highest completed level of education with 1="primary school" to 7="university"; Mean=5.51, S.D.=1.37) and had on average a normal BMI, although this differed strongly (12.27–47.32 kg/m<sup>2</sup>) as can be expected in women with different types of ED. See also [Table 1](#).

Women with ED were recruited from three specialized clinics for ED and from individual therapists in The Netherlands, and they were at the time of this study all in treatment for their ED. On average, their illness duration was 17.89 years (S.D.=5.59) and the age of onset was 10.41 years (S.D.=9.12). Their diagnoses were determined according to DSM-IV criteria as ascertained by ED experts (all medical doctors or psychologists specialized in ED).

Sixty-four healthy controls were recruited from Utrecht University and from the community. Prior to participation, they were screened by telephone using the Mini International Neuropsychiatric Interview (MINI), an abbreviated psychiatric structured interview (see also [van Vliet and de Beurs, 2007](#)) to preclude any psychiatric disorder (anxiety disorder, substance abuse) and in particular all ED. Second, Eating Disorders Diagnostic Scale diagnosis scores (EDDS, see Instruments) were calculated and, where necessary, used to exclude healthy controls who showed sub- or full threshold ED.

Since this study was part of a larger study, participants were further excluded if they were on antidepressant medication. Ten healthy control women (showing sub- or full threshold ED diagnoses or reported loss of control eating behavior on the EDDS) and two BED women (on antidepressant medication) were excluded,

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