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# Emotional eating in anorexia nervosa and bulimia nervosa

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**Abstract**

**Objectives:** The relationship between emotional states and eating behaviors is complex, and emotional eating has been identified as a possible factor triggering binge eating in bulimia nervosa (BN) and binge eating disorder. Few studies considered emotional eating in patients with anorexia nervosa.
**Methods:** The present study evaluated the clinical correlates of emotional eating in 251 eating-disordered (EDs) subjects (70 AN restricting type, 71 AN binge eating/purging type, 110 BN purging type) and in a group of 89 healthy control subjects. Subjects were assessed by means of a clinical interview (Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) and several self-reported questionnaires, including the Emotional Eating Scale (EES).
**Results:** No significant differences were found between the 3 EDs groups in terms of EES total score, and all patients with ED showed higher EES scores compared with control subjects. Emotional eating was associated with subjective binge eating in AN binge eating/purging type and with objective binge eating in patients with BN. Among patients with AN restricting type, emotional eating was associated with restraint, but this association was lost when controlling for fear of loss of control over eating, which was the principal determinant of restraint.
**Conclusion:** Emotional eating and fear of loss of control over eating are significantly associated with specific eating attitudes and behaviors, according to the different diagnoses. Emotional eating is a relevant psychopathologic dimension that deserves a careful investigation in both anorectic and bulimic patients.


## 1. Introduction

The relationship between emotional states and eating behaviors is complex, and different studies showed that there is a significant variability across individuals about the emotion-induced changes of eating [1,2]. As far as negative emotions are concerned, loss of appetite and reduction of food intake have been considered physiological responses [3,4], whereas an increase in food intake has been considered an inappropriate response to distress [5]. Emotional eating has been defined as "the tendency to eat in response to a range of negative emotions such as anxiety, depression, anger and loneliness, to cope with negative affect." This construct is not merely focused on eating behavior and overeating, but it specifically addresses the feelings that lead people to experience an urge to eat and the desire of assuming food in response to different emotions [6]. Emotional eating has been identified as a possible factor triggering binge eating in bulimia nervosa (BN) [7] and binge eating disorder (ED) [8-13], suggesting that episodes of binge eating are often precipitated by stress and negative affects [9] and that binge eating appears to be associated with a subsequent decrease in negative affect [14,15]. However, considering that affective regulation difficulty is a common trait of EDs [16-18] and that patients with ED have high levels of alexithymia [8,18], it is possible that emotional eating plays a significant role also in anorexia nervosa (AN). In fact, behaviors such as restricted food consumption, binge eating, and compensatory behaviors are interpreted as responses to regulate intense or relatively undifferentiated emotional states, to restrict the affective experience or to deviate attention from negative emotions [18].

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To detect the relationships between emotional eating and eating attitudes and behavior, the psychopathologic distinction between those patients who restrict food intake without binging and purging (ie, anorectic restricting type) and those who binge and purge is of interest [19]. In particular, patients with ED perceive a relevant distress associated with eating, which can be related to the fear of losing control over eating even without experiencing an actual loss of control, or to the feeling of the actual perceived loss of control over eating, which in turn is judged a failure of the personal dietary rules [20].

Moreover, the size of food eaten when patients perceive the loss of control may be a useful tool to understand the relationships between emotions and eating behaviors in patients with ED. For instance, individuals with AN may feel distressed and out of control when eating a small amount of food exceeding their typical daily intake. The feeling of loss of control may be associated with different sizes of food eaten, because many patients with AN binge eating/purging type (AN-B/P) can eat relatively small amount of food when they reported they had a binge [21,22], whereas patients with BN and binge ED can experience both objective and subjective binge episodes [23-25]. It can be hypothesized that the desire to eat, to cope with negative feelings, is not associated only with the experience of overeating but also, or mainly, with the fear of losing control over eating.

To the best of our knowledge, only 2 studies have investigated emotional eating in anorectic patients [19,26], reporting that patients with AN-B/P showed higher scores on external eating and emotional eating, especially in response to negative emotions, when compared with subjects with AN restricting type (AN-R).

According to these observations and given the dearth of studies on this topic, the aims of the present study were as follows:

- To assess emotional eating in patients with restricting (AN-R) and binging/purging (AN-B/P) AN and to examine possible similarities or differences in patients with BN.
- To evaluate the possible associations between emotional eating and other psychopathologic variables in anorectic and bulimic subjects.

## 2. Methods

### 2.1. Procedure

The study was conducted at the Outpatient Clinic for Eating Disorders of the Psychiatric Unit of the University of Florence, Italy. Participants were recruited from referrals by family doctors and other clinicians. All the diagnostic procedures and the psychometric tests are part of the routine clinical assessment for patients with ED, performed at our Clinic. Before the collection of data, during the first routine visit, the procedures of the study were fully explained; after that, patients were asked to provide their written informed consent. The study protocol was approved by the ethics committee of the institution.

### 2.2. Participants

All patients attending the Outpatient Clinic for Eating Disorders between March 2003 and July 2005 were enrolled in the study, provided they met the following inclusion criteria: age between 18 and 60 years, diagnosis of AN (restricting and binging purging subtypes) and BN binge-purging type, assessed by means of the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) [27]. The exclusion criteria were as follows: comorbid schizophrenia, illiteracy, and mental retardation.

Five patients refused to participate in the study, and 8 patients were excluded because of the following reasons: schizophrenia (3 patients), illiteracy (3 patients), and mental retardation (2 patients). The final sample was composed of 251 subjects, 70 with AN-R, 71 with AN-B/P, and 110 with BN binge-purging type.

The control group was enrolled according to the following procedure: each control was extracted from the alphabetical computerized list of clients of a general practitioner and was selected as the first one fulfilling the inclusion criteria and willing to participate. In the case of refusal, the next one on the list, fitting the matching criteria, was asked to participate. The control inclusion criteria were as follows: age between 18 and 60 years and body mass index ranging between 18 and 24.9 $kg/m^2$. The exclusion criteria were the same of the patients groups, plus the absence of any actual and lifetime ED diagnosis, according to *DSM-IV* criteria, evaluated by means of a face-to-face interview (Structured Clinical Interview for *DSM-IV* [SCID-I]). Eight subjects were excluded from the initial list of controls because of the following reasons: refusal to give their informed consent (4), illiteracy (3), and mental retardation (1). The final healthy control group was composed of 89 subjects (3 men, or 3.3%) with mean age of 28.66 ± 7.53 years.

### 2.3. Measures

The sociodemographic data, as well as the anthropometric measures and the main organic comorbidities, were assessed by a psychiatrist at the beginning of the visit.

Anthropometric measurements were made using standard calibrated instruments on the day of the psychopathologic assessment.

To assess the diagnosis of AN and BN, patients were interviewed by 2 expert clinicians (V.R. and G.C.), by means of the SCID-I [27].

Objective binge episodes were defined as the consumption of a large amount of food in a discrete episode, while experiencing a sense of loss of control. Subjective binge episodes were defined as the consumption of a not