



# The role of sensation seeking and motivations for eating in female and male adolescents who binge eat



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## ABSTRACT

**Objectives:** Although different personality traits have been associated with the onset and maintenance of binge eating, the role of sensation seeking is still not well documented. The aim of the present study was to investigate the role of sensation seeking and motivations for eating in male and female adolescents who binge eat.

**Methods:** 336 adolescents (196 boys and 140 girls, mean age 17.48) completed a survey composed of Binge Eating Scale, Motivation for Eating Scale, and Brief Sensation Seeking Scale.

**Results:** Our results showed that for female adolescents, binge eating was significantly correlated with age, body mass index (BMI), Environmental and Emotional Eating. Hierarchical multiple regression analysis indicated that BMI was a significant positive predictor of binge eating; Emotional and Physical Eating accounted for 34% of the variance. For male adolescents, binge eating was significantly correlated with age, BMI, Boredom susceptibility, Experience seeking, environmental, Social and Emotional Eating. The most significant variables that contribute to binge symptoms, were age and BMI (that accounted for 16% of the variance), Experience seeking and Boredom susceptibility (11%) and emotional eating (18%).

**Conclusions:** Our results provided support for emotional motivations as significant triggers for binge eating behavior in both male and female adolescents. Although two sensation seeking dimensions were significant predictors of binge eating in males, sensation seeking was not associated to binge eating in the female subsample.

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## 1. Introduction

Binge eating is defined as the consumption of larger amount of food than usual during a limited period of time (usually not more than 2 h) accompanied by a feeling of marked distress and loss of control over eating in absence of compensatory behaviors to control weight (American Psychiatric Association, 2013). During the binge episode especially high calorie foods are consumed which are normally perceived as “forbidden” (Knight & Boland, 1989). Due to the repetitive and uncontrollable nature of binge eating behavior, it is often conceptualized as “addictive” (Ferriter & Ray, 2011). It is prevalent among college-aged women and previous studies reported that 16–25% of college women engage in bingeing episodes and 9–15% binge eat once a week or more; as for the men, 5% binge eat at least weekly (Schlundt & Johnson, 1990; Wolff & Wittrock, 1998). Additionally, Neumark-Sztainer, Wall, Larson, Eisenberg, and Loth (2011) showed that 9.9% of girls and 3% of boys engaged in binge eating during adolescence. For this reason, many researchers have tried to explore different factors as possible triggers for binge eating (e.g. Allen, Crosby, Oddy, & Byrne, 2013; Neumark-Sztainer et al., 2011). Studies on the dispositional characteristics have

identified impulsivity trait as consistently associated with binge eating (e.g. Benjamin & Wulfert, 2005; Kane, Loxton, Staiger, & Dawe, 2004; Vitousek & Manke, 1994). Whiteside and Lynam (2001) conceptualized impulsivity as characterized by four different indicators: urgency or the tendency to act rashly in response to intense negative emotions; lack of premeditation, that reflects the tendency to behave without a careful deliberation; lack of perseverance, which refers to the inclination to be unable to pursue goals with firmness and constancy; and sensation seeking.

Sensation seeking can be defined as “a need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experience” (Zuckerman, 1979, p. 10). This construct is characterized by four dimensions: Thrill and adventure seeking, that is the desire to engage in outdoor sports and activities which involve danger and risk; Experience seeking, that represents seeking experiences through senses and mind and nonconforming life choices; Disinhibition, that refers to the desire of social and sexual disinhibited activities such wild parties and variety in sexual partners, and Boredom susceptibility, that represents the intolerance of routine, repetitive activities and boring people (Zuckerman, Eysenck, & Eysenck, 1978).

Although the role of urgency as a risk factor for eating disorders has been demonstrated, only few studies have examined the relationship between sensation seeking and eating behaviors and, to our knowledge, only one has investigated the association between sensation seeking

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and binge eating in non-clinical female adolescent sample. For instance, Jansen, Klaver, Merckelbach, and van den Hout (1989) reported that individuals who are worried about their body shape and weight and are often engaged in restrained dieting, have higher sensation seeking scores than control group. Rossier, Bolognini, Plancherel, and Halfon (2000) found that adolescent girls and young women aged 14–25 with bulimic behaviors characterized by recurrent binge eating episodes, tended to have high score of sensation seeking especially on the Thrill and adventure seeking dimension. Another study based on a clinical sample of adult females with different eating behaviors (Steiger, Jabalpurwala, Champagne, & Stotland, 1997) found that sensation seeking was a characteristic of bingeing behavior. Contrary to these results, Fischer and Smith (2008) showed that in college students sensation seeking seemed to be more associated to other problematic behaviors, as problem drinking and pathological gambling than to binge eating.

Available research has mainly focused only on sensation seeking without analyzing the relationship that the different indicators could have with binge eating behaviors. Furthermore, this line of research focused on personality traits, does not clarify why in the presence of a common personality factor (e.g. sensation seeking), some individuals exhibit binge eating and others do not. For this reason, there is an existing body of research aimed to understand the motivations underneath bingeing behavior. Jackson, Cooper, Mintz, and Albino (2003) proposed a model that distinguishes four different motives that can be involved in eating behaviors: coping, social, pleasure and compliance. Coping-motivated eating consists of eating to reduce or avoid negative emotional states such as anxiety, frustration or loneliness (Arnou, Kenardy, & Agras, 1995; Heatherton & Baumeister, 1991; Sherwood, Crowther, Wills, & Ben-Porath, 2000); this “emotional eating” has been found in several studies that suggest that binge eating is preceded by negative affect and followed by immediate and temporarily reinforcing mechanisms that enhance the mood (e.g. Markey & Vander Wal, 2007; Munsch, Meyer, Quartier, & Wilhelm, 2012; Polivy & Herman, 1993). Social motives occur in response to external norms and expectations; they are activated when the consumption of food occurs during social occasions where individuals are motivated to adhere to group norms (Pliner & Chaiken, 1990; Roth, Herman, Polivy, & Pliner, 2001). Compliance motives are instead influenced by internalized expectations that seem to characterize binge eaters, due to their sensitivity to the perceived demands that come from others; when they feel to fail in reaching these standards and expectations, “compliance eating” seems to offer an escape from negative self-evaluations and to reduce anxiety (Heatherton & Baumeister, 1991). Finally, other studies (Schmidt, 2000; Waters, Hill, & Waller, 2001) suggest that binge eating is influenced by sensory cues strictly related to food as seeing an attractive food or smelling a delicious flavor; binge eaters seem to report to enjoy food's taste, smell and texture. This finding could suggest that binge episodes could be activated by pleasure motivations.

Compared to the different types of motivations, emotional eating has been found as consistently and strongly associated with binge eating (e.g. Jackson et al., 2003; Ricca et al., 2009; Stice, Presnell, & Spangler, 2002); it has been argued that this behavior is used as a coping mechanism in order to prevent or provide relief from negative emotions in absence of a more adaptive way to manage stress or to increase the level of positive emotions experienced (e.g. Laghi et al., 2012a; 2012b; 2012c, Lavender & Anderson, 2010; Whiteside et al., 2007). Moreover, females participants were resulted significantly more prone to eat to cope with negative affective states than males. This result was supported by other studies that showed that females with binge eating behavior were more likely to have higher levels of emotional eating (Laghi et al., 2013, 2014, Waller & Osman, 1998; Waters et al., 2001).

The current study was aimed to analyze the role of different indicators of sensation seeking and different types of motivations for eating in relation to binge eating behavior in male and female adolescents. In accordance with previous findings (Jackson et al., 2003; Ricca et al., 2009; Stice et al., 2002), we hypothesized that emotional motivation would be

a significant predictor of binge eating compared to other motivations in both males and females and also that female subsample would show higher levels of emotional eating than males. To our knowledge this is the first study that explored the association between different facets of sensation seeking and binge eating in male and female adolescents. Following Thøgersen-Ntoumani, Ntoumanis, Barkoukis, and Spray (2009), due to the lack of research on this topic, we do not provide a priori hypotheses about which aspects of sensation seeking would predict binge eating behavior. Additionally, in the absence of research on male adolescents, we investigated males and females independently without offering hypothesis regarding gender differences.

## 2. Methods

### 2.1. Participants

The sample consisted of 336 adolescents (196 boys and 140 girls). The average age of the students was 17.48 (SD = 0.50; range 14–18). Participation was preceded by an informed-consent procedure that required active consent from both students and parents. The questionnaires were administered in the classroom during a regular class period and took approximately 30 min. to complete. Instructions stated that the questionnaires were voluntary and that responses were anonymous and confidential. This survey was reviewed and approved by the Ethics Commission of the Department of Developmental and Social Psychology of Sapienza, University of Rome.

### 2.2. Measures

#### 2.2.1. Binge Eating Scale

To measure the severity of binge eating, the BES was applied (Gormally, Black, Daston, & Rardin, 1982). The BES consists of 16 items, 8 describing the behavioral manifestations of binge eating and 8 describing feelings and cognitions associated with binge eating. Each item has three or four weighted statements, and the respondent is directed to choose one. The BES is scored by adding the individual values for the 16 items with the possible range of scores from 0 to 46 (Gormally et al., 1982; Timmerman, 1999). Internal consistency for the BES in the current investigation was satisfactory ( $\alpha = .78$ ). BES translation has been validated by the NetWorking Team Group of the Italian Society for Eating Behavior Disorders (Dalle Grave, Calugi, Corica, Di Domizio, & Marchesini, 2009). Preliminary psychometric data supports its internal consistency and concurrent validity (Dalle Grave, Calugi, Petroni, Di Domizio, & Marchesini, 2010; Dalle Grave et al., 2009; Mannucci et al., 2010; Ricca et al., 2000). According to the above mentioned literature, we chose to use the total score to yield a continuous measure of binge eating tendencies.

#### 2.2.2. Motivation for Eating Scale (MFES)

To measure motivations for eating, MFES was applied (Hawks, Merrill, Gast, & Hawks, 2004). This instrument consists of forty-three item Likert-type scale, on which each item has five possible responses (from Never to Always). It contains the following 4 subscales: Emotional eating (EM), that arises when food is consumed primarily in response to such states as loneliness, boredom, anxiety, stress, frustration, or depression (sample item, “The situations or conditions that most often exist when I choose to eat are when I am alone”;  $\alpha = .91$  in the present study); Environmental eating (EN), defined as food consumption that occurs in response to environmental triggers such as, advertising, smelling food (sample item, “The situations or conditions that most often exist when I choose to eat are when I see something good at the checkout stand”;  $\alpha = .78$  in the present study); Physical eating (P), that takes place in reaction to physical hunger cues such as a growling stomach, other physical sensations of hunger, or other recognizable signs that the body needs food (sample item, “The situations or conditions that most often exist when I choose to eat are when I am weak or lightheaded

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