

## Effects of distress, alexithymia and impulsivity on eating

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### Abstract

*Objective:* To improve our understanding of possible mechanisms underlying emotional overeating this study examined the effects of a distress manipulation on food intake in relation to alexithymia and impulsivity.

*Method:* Participants were 86 females who were subjected to a distress manipulation (the anticipation of a public speaking task) prior to an ad lib taste task and filled out questionnaires on impulsivity and the alexithymia constructs difficulty identifying and describing feelings.

*Results:* Alexithymia significantly ( $p < .05$ ) moderated the relationship between food consumption and distress. Instead of eating less in the distress condition, alexithymic females ate the same or even more, this showing a ‘biological unnatural’ and ‘inapt’ response.

*Conclusion:* Findings suggest that for the ‘natural’ distress response (reduction of food intake) good ability to identify and describe feelings to others is required, and that the presence or absence of these abilities may predict which people respond to distress by undereating or by overeating. The results provide empirical support for Bruch’s conceptualisation of poor interoceptive awareness as possible predictive factor for emotional overeating.

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Distress-induced eating – *emotional overeating* – has been considered an ‘inapt’ response to distress (Heatherton, Herman, & Polivy, 1991) because the physiological reaction to distress mimics the internal sensations associated with feeding-induced satiety (Schachter, Goldman, & Gordon, 1968). Specifically, emotional distress such as fear, apprehension or tension inhibits gastric motility (Carlson, 1916), promotes the release of sugar into the bloodstream (Cannon, 1915) and therefore normally suppresses hunger and eating (Heatherton et al., 1991). As a reduction of intake during distress is considered the ‘natural biological’ response, it has been postulated that the ‘unnatural’ response of emotional overeating is acquired (Wardle, 1990). According to psychosomatic theory emotional overeating is the result of learning experiences early in life where food was used as a way of coping with distress and psychological problems (Bruch, 1973; Geliebter & Aversa, 2003; Kaplan & Kaplan, 1957).

Bruch’s conceptualisation of psychosomatic theory (Bruch, 1973) focuses on poor interoceptive awareness as outcome of early learning experiences where there was insufficient regard for the child’s real needs. Poor interoceptive awareness is associated with difficulties to recognise whether one is hungry or satiated, or suffering from some other

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discomfort, and may result in a pattern of responding to virtually any arousal state by food intake: emotional overeating. Apart from difficulty in perceiving and interpreting the visceral states related to hunger and satiety, poor interoceptive awareness also includes a confusion of visceral sensations related to emotions, resulting into difficulty in recognising and accurately identifying emotions. Poor interoceptive awareness is highly associated with alexithymia (Garner, 1991; Taylor, Parker, Bagby, & Bourke, 1996) and particularly with the alexithymic aspects difficulty identifying feelings and difficulty describing feelings to other people. Alexithymia was found to be associated with self-reported emotional eating in obese men and women (Larsen, van Strien, Eisinga, & Engels, 2006) and in overweight women with a binge eating disorder (Pinaquy, Chabrol, Simon, Louvet & Barber, 2003).

In contrast to Bruch (1973), where emotional overeating does not necessarily decrease distress, in Kaplan and Kaplan's (1957) original interpretation of psychosomatic theory, and in more recent affect regulation theories (Heatherton & Baumeister, 1991), emotional overeating serves to allay distress. According to the escape theory of Heatherton and Baumeister (1991), a shift to low levels of thinking will result in a reliance on immediate stimuli, as well as a dampening of affect. In addition to excessive intake of food, also excessive intake of alcohol or drugs or other impulsive, reckless and destructive behaviours could serve to escape/block awareness of intolerable emotions (Fischer, Smith, & Anderson, 2003; Heatherton & Baumeister, 1991; Penas-Lledó & Waller, 2001; Stice, 2002). Alternatively, emotional eating and impulsivity could both be the result of an underlying reward deficit syndrome (Blum et al., 2000; Volkow et al., 2003; Dawe & Loxton, 2004). Emotional eating was found to be associated with a hypo-function of dopamine-related reward systems in the dorsal striatum of the brain, which finding suggests that negative emotions may elicit excessive food consumption in emotional eaters to blunt effects of dopamine-related reward deficits (Volkow et al., 2003). A reward deficit syndrome has also been held responsible for a higher receptivity to the reinforcing value of alcohol and other drugs, and more proneness to impulsive, reckless and destructive behaviours (Blum et al., 2000; Dawe & Loxton, 2004). Therefore emotional overeating may not only be associated with more difficulties in identifying and describing feelings, but also with more impulsivity.

The hypothesis that emotional overeating is associated with alexithymia and impulsivity was assessed by subjecting females to a distress manipulation prior to an ad lib taste task. In this distress manipulation subjects anticipated having to give a speech in front of an evaluative audience. In an earlier study on dieters and non-dieters by Heatherton et al. (1991) this distress manipulation was found to be effective at eliciting self-reported dysphoria and apprehension and at inducing autonomic arousal of sufficient magnitude to suppress hunger and eating in non-dieters. Food intake was assessed in function of the females' difficulty in identifying and describing feelings, and impulsivity.

Identification of alexithymia and impulsivity as possible moderators<sup>1</sup> of the relationship between food intake and distress would advance our understanding of emotional overeating as possible aetiological factor for counterregulatory eating, binge eating and weight gain (Masheb & Grilo, 2006; Stice, Presnell, & Spangler, 2002; Van Strien & Ouwens, 2003; Van Strien, Rookus, Bergers, Frijters, & Defares, 1986).

## 1. Method

### 1.1. Participants

The subjects were 86 women recruited from canteens of the University of Nijmegen, the Netherlands. Their mean age was 21.1 years (SD = 1.88) and mean Body Mass Index (BMI) was 23.0 (SD = 3.45; BMI = weight in kilograms/length in meters raised to the square, as measured by the experimenter).

### 1.2. Measures

Inadequate impulse regulation was measured with the inadequate impulse regulation scale of the Eating Disorder Inventory (EDI-2; Garner, 1991). This subscale has 11 items and assesses the tendency toward impulsivity, substance abuse, recklessness, hostility, destructiveness in interpersonal relationships and self-destructiveness (item examples: "I am prone to outbursts of anger or rage"; "I have to be careful of my tendency to abuse alcohol"). Response categories range from 1 'never' to 6 'always'. Untransformed responses were utilised as scale transformation was found to damage

<sup>1</sup> We use the terms interaction and moderation synonymously.

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