



## Subtyping children and adolescents with loss of control eating by negative affect and dietary restraint

Andrea B. Goldschmidt<sup>a</sup>, Marian Tanofsky-Kraff<sup>b,\*</sup>, Lien Goossens<sup>c</sup>, Kamryn T. Eddy<sup>d,e,1</sup>, Rebecca Ringham<sup>f</sup>, Susan Z. Yanovski<sup>b,g</sup>, Caroline Braet<sup>c</sup>, Marsha D. Marcus<sup>f</sup>, Denise E. Wilfley<sup>h</sup>, Jack A. Yanovski<sup>b</sup>

<sup>a</sup> Department of Psychology, Washington University, 660 South Euclid Avenue, Campus Box 8134, St. Louis, MO 63110, USA

<sup>b</sup> Unit on Growth and Obesity, PDEGEN, Eunice Kennedy Shriver, National Institute of Child Health and Human Development, National Institutes of Health, Hatfield Clinical Research Center, Room 1-3330, MSC 1103, Bethesda, MD 20892, USA

<sup>c</sup> Department of Developmental, Personality and Social Psychology, Ghent University, Henri Dunantlaan 2, 9000 Ghent, Belgium

<sup>d</sup> Center for Anxiety and Related Disorders, 648 Beacon Street, 6th Floor, Boston, MA 02215, USA

<sup>e</sup> Children's Hospital Boston, 300 Longwood Avenue, Boston, MA 02115, USA

<sup>f</sup> Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center, 3811 O'Hara Street, Pittsburgh, PA 15213, USA

<sup>g</sup> National Institute of Diabetes and Digestive and Kidney Diseases, 6707 Democracy Boulevard, Room 675, Bethesda, MD 20892, USA

<sup>h</sup> Department of Psychiatry, Washington University School of Medicine, 660 South Euclid Avenue, Campus Box 8134, St. Louis, MO 63110, USA

### ARTICLE INFO

#### Article history:

Received 17 November 2007

Received in revised form

8 February 2008

Accepted 11 March 2008

#### Keywords:

Loss of control eating

Negative affect

Dietary restraint

Children

Adolescents

### ABSTRACT

**Objective:** Research suggests that subtyping adults with binge eating disorders by dietary restraint and negative affect predicts comorbid psychopathology, binge eating severity, and treatment outcome. Little research has explored the validity and clinical utility of subtyping youth along these dimensions.

**Method:** Children (aged 8–18 years) reporting loss of control eating ( $n = 159$ ) were characterized based upon measures of dietary restraint and negative affect using cluster analysis, and then compared regarding disordered eating attitudes and behaviors, and parent-reported behavior problems.

**Results:** Robust subtypes characterized by dietary restraint ( $n = 114$ ; 71.7%) and dietary restraint/high negative affect ( $n = 45$ ; 28.3%) emerged. Compared to the former group, the dietary restraint/high negative affect subtype evidenced increased shape and weight concerns, more frequent binge eating episodes, and higher rates of parent-reported problems (all  $ps < 0.05$ ).

**Conclusion:** Similar to findings from the adult literature, the presence of negative affect may mark a more severe variant of loss of control eating in youth. Future research should explore the impact of dietary restraint/negative affect subtypes on psychiatric functioning, body weight, and treatment outcome.

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\* Corresponding author. Present address: Department of Medical and Clinical Psychology, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814, USA. Tel.: +1 301 295 1482; fax: +1 301 295 3034.

E-mail addresses: [goldscha@psychiatry.wustl.edu](mailto:goldscha@psychiatry.wustl.edu) (A.B. Goldschmidt), [mtanofsky@usuhs.mil](mailto:mtanofsky@usuhs.mil) (M. Tanofsky-Kraff), [lien.goossens@ugent.be](mailto:lien.goossens@ugent.be) (L. Goossens), [kamryn@gmail.com](mailto:kamryn@gmail.com) (K.T. Eddy), [ringhamrm@upmc.edu](mailto:ringhamrm@upmc.edu) (R. Ringham), [yanovskis@extra.niddk.nih.gov](mailto:yanovskis@extra.niddk.nih.gov) (S.Z. Yanovski), [caroline.braet@ugent.be](mailto:caroline.braet@ugent.be) (C. Braet), [marcusmd@upmc.edu](mailto:marcusmd@upmc.edu) (M.D. Marcus), [wilfleyd@psychiatry.wustl.edu](mailto:wilfleyd@psychiatry.wustl.edu) (D.E. Wilfley), [yanovskj@mail.nih.gov](mailto:yanovskj@mail.nih.gov) (J.A. Yanovski).

<sup>1</sup> Present Address: Massachusetts General Hospital/Harvard Medical School, 2 Longfellow Place, Suite 200, Boston, MA 02114, USA.

## Introduction

Research in adults with binge eating disorder (BED) and bulimia nervosa (BN) suggests the presence of two distinct subtypes, one characterized by pure dietary restraint (i.e., cognitive and/or behavioral aspects of dieting, such as desire to limit food intake in the absence of overt behavioral efforts to do so, and/or actual behavioral efforts to limit food intake, respectively; Lowe & Timko, 2004), and the other by a mixed presentation combining dietary restraint and negative affect. The latter subtype has been consistently found to co-occur with increased psychiatric symptoms in adults, including greater shape and weight concerns, increased psychopathology and personality disturbances, poorer treatment response, and, in some cases, greater severity and chronicity of binge eating (Grilo, Masheb, & Berman, 2001; Grilo, Masheb, & Wilson, 2001; Loeb, Wilson, Gilbert, & Labouvie, 2000; Stice & Agras, 1999; Stice et al., 2001; Stice & Fairburn, 2003). To date, however, no association has been found with regard to dietary restraint/negative affect subtypes and body mass index (BMI; kg/m<sup>2</sup>) in adults (Grilo, Masheb, & Berman, 2001; Grilo, Masheb, & Wilson, 2001; Loeb et al., 2000; Stice & Agras, 1999; Stice et al., 2001; Stice & Fairburn, 2003).

Loss of control eating (LOC; the feeling that one cannot control what or how much one is eating) and binge eating (consumption of an unambiguously large amount of food accompanied by LOC; American Psychiatric Association, 1994) behaviors are common in children and adolescents (Glasofer et al., 2007; Tanofsky-Kraff et al., 2004). LOC while eating in childhood has been associated with overweight and excess body fat (Field et al., 2003; Stice, Presnell, Shaw, & Rohde, 2005; Stice, Presnell, & Spangler, 2002; Tanofsky-Kraff et al., 2004, 2006), and with a higher degree of eating-related and general psychopathology (Decaluwe & Braet, 2003; Goldschmidt et al., 2008; Goossens, Braet, & Decaluwe, 2007; Morgan et al., 2002; Tanofsky-Kraff, Faden, Yanovski, Wilfley, & Yanovski, 2005). Similar to adults with binge eating (e.g., Chua, Touyz, & Hill, 2004; Fairburn et al., 1998; Fairburn, Welch, Doll, Davies, & O'Connor, 1997; Telch & Agras, 1996), negative affect and dietary restraint each has been implicated in the onset and maintenance of LOC and binge eating in youth. Children with LOC eating problems are more likely to exhibit depressive symptoms than weight-matched peers (Decaluwe & Braet, 2003; Eddy et al., 2007; Goossens et al., 2007; Isnard et al., 2003; Morgan et al., 2002; Tanofsky-Kraff et al., 2005), and prospective data confirm that negative affect precedes and predicts binge eating in youth (Stice & Agras, 1998; Stice, Killen, Hayward, & Taylor, 1998; Stice et al., 2002). According to several theories of affect regulation, binge eating may serve to modulate negative affect. For example, binge eating may provide a distraction from external stressors (Heatherton & Baumeister, 1991) or enable a “trade-off,” whereby the aversive emotions preceding binge eating (e.g., anger) are replaced by less aversive emotions subsequent to binge eating (e.g., guilt; Kenardy, Arnou, & Agras, 1996). Indeed, preliminary evidence suggests that youth with LOC eating problems are more likely than those without eating problems to endorse emotional eating in general (Goossens et al., 2007; Tanofsky-Kraff, Theim et al., 2007), and to report that LOC eating episodes occurred in response to a negative emotion (Tanofsky-Kraff, Goossens et al., 2007).

The literature concerning the role of dietary restraint in the onset of LOC eating in children has been less consistent. Restraint Theory, which posits that binge eating results from perceived lapses in strict dietary restraint (Polivy & Herman, 1985), has received some support in the empirical literature, with prospective evidence indicating that dietary restraint predicts the onset of binge eating in youth (Stice et al., 1998, 2002). Whereas by adulthood, most individuals with BN and BED report an extensive dieting history (e.g., de Zwaan et al., 1994; Kurth, Krahn, Nairn, & Drewnowski, 1995), some (Decaluwe & Braet, 2005; Field et al., 2003; Tanofsky-Kraff et al., 2004) but not all (Claus, Braet, & Decaluwe, 2006; Decaluwe & Braet, 2003; Decaluwe, Braet, & Fairburn, 2003; Glasofer et al., 2007) cross-sectional studies in children support an association between dieting and binge eating. In one study, most children recalled the onset of LOC eating prior to their first attempt at dieting (Tanofsky-Kraff et al., 2005), and another study found that only a minority endorsed having eaten a forbidden food and/or restricting their food intake prior to an episode of LOC eating (Tanofsky-Kraff, Goossens et al., 2007). Similarly inconsistent findings regarding the role of dieting in the etiology of BED are reported (e.g., Howard & Porzelius, 1999; Spurrell, Wilfley, Tanofsky, & Brownell, 1997), and are in contrast to BN, in which dieting typically precedes and helps maintain the disorder (e.g., Fairburn et al., 2003; Pederson Mussell et al., 1997). Taken together, data from the child literature suggest the presence of other important variables besides, or in addition to, dieting behaviors and/or cognitions in the onset of LOC eating in youth (e.g., Claus et al., 2006).

Despite the literature documenting associations between LOC eating and increased negative affect and dietary restraint (Goossens et al., 2007; Tanofsky-Kraff et al., 2004), data regarding the validity of dietary restraint and dietary restraint/negative affect subtypes in pediatric samples are limited. Subtyping youth with LOC eating for the presence of dietary restraint and/or negative affect may have important research and clinical implications in terms of identifying individuals at risk for comorbid psychopathology, highlighting relevant intervention foci, and predicting treatment outcome. To our knowledge, only two studies have examined binge eating subtypes in pediatric samples, and both suggest that the dietary restraint/negative affect subtyping scheme is a relatively robust phenomenon in youth as well. Indeed, the dietary restraint/negative affect subtype has been associated with significantly greater eating-related and general psychopathology across samples of adolescents with bulimia nervosa (Chen & Le Grange, 2007) and mixed symptoms of disordered eating (e.g., binge eating, vomiting, fear of weight gain; Grilo, 2004). However, because both of these studies were undertaken in adolescent samples, it remains unclear whether dietary restraint/negative affect subtypes can be replicated in pre-adolescent samples as well. Moreover, it is unknown if the subtyping scheme is prevalent in youth presenting with symptoms more consistent with BED (i.e., LOC eating in the absence of regular use of compensatory behaviors).

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