

Research report

Dietary restraint: Intention versus behavior to restrict food intake

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Abstract

The Dutch Eating Behavior Questionnaire Restraint Scale (DEBQ-R) assesses both intentions to restrict food intake (3 items) and actual behavioral restraint (7 items). Studies in general population's samples have shown that the DEBQ-R is a reliable instrument with all items loading highly on a single factor. The purpose of the present study was to examine the psychometric properties of a two-factor intention-versus-behavior structure of the DEBQ-R in 3 different weight-concerned samples with people from different (over)weight categories (total $N = 790$) using confirmatory factor analysis. A robust two-factor structure emerged in the various samples, generally supporting a distinction between DEBQ-R questions relating to intentions to restrict food intake and actual restrictive behavior. Results obtained in this study are important, because they suggest that a distinction between restrained intention and behavior could help to explain the relation between dietary restraint and external overeating tendencies. Future longitudinal research should examine whether the newly developed dietary restraint scales predict changes in overeating and Body Mass Index (BMI).

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Introduction

Obesity rates have risen dramatically in most Western societies (James, Leach, Kalamara, & Shayeghi, 2001). Because these increases have occurred over a relatively short time period, genetic factors are not seen as playing a predominant role in the current obesity epidemic. Instead, the combination of environmental and psychological factors promoting overeating, a sedentary lifestyle, and some genetic susceptibility, seems likely to provide the best explanation for the "obesity epidemic" (Wadden, Brownell, & Foster, 2002). At the same time that obesity rates have increased, dieting or dietary restraint, defined as intentional efforts to achieve or maintain a desired weight through reduced caloric intake, has also increased drama-

tically, particularly among women (Jeffery, Adlis, & Forster, 1991). Although the term dietary restraint originally referred to a tendency to oscillate between periods of caloric restriction and overeating (Heatherton, Herman, Polivy, King, & McGree, 1988), we use the term 'dietary restraint' as synonymous with 'dieting', avoiding assumptions about the association with overeating.

In modern societies, typified by easy access to abundant food, restrained eating may provide an adaptive behavior to reduce weight gain. Paradoxically, many prospective studies have shown that adolescent girls and adults with elevated scores on dieting scales are at increased risk for future onset of obesity and weight gain (Field et al., 2003; French et al., 1994; Klesges, Isbell, & Klesges, 1992; Stice, Cameron, Killen, Hayward, & Taylor, 1999; Stice, Presnell, Shaw, & Rohde, 2005). One interpretation of this paradoxical finding is that dieting may promote weight gain because it leads to increased metabolic efficiency (Klesges et al., 1992). An alternate interpretation is given by the

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restraint theory, which suggests that an over-reliance on cognitive control over eating, rather than physiological cues, may leave dieters vulnerable to overeating when these cognitive controls are disrupted by emotions or the intake of forbidden food (Herman & Polivy, 1980). It is also possible that individuals with a chronic overeating tendency find themselves attempting to restrict their intake, but ultimately fail in these efforts and show weight gain (Stice, 2002; Van Strien, Engels, Van Staveren, & Herman, 2006). Finally, it may be that although restrained eaters eat less than desired, they eat more than is required and thereby gain weight (Van Strien et al., 2006). The latter three interpretations have in common their conclusion that most individuals in the general population scoring high on dieting scales fail to show true weight-loss dieting.

Randomized controlled trials indicate that low-calorie/fat diets produce significant weight losses for up to 36 months (Avenell et al., 2004). These findings suggest that true weight-loss dieting is possible. It will be vital to develop scales that validly assess true weight-loss dieting and perceived weight-loss dieting and that distinguish between these two important groups (Stice, Presnell, Lowe, & Burton, 2006). Some successful attempts to do so have already been made. For the Three Factor Eating Questionnaire Restraint Scale, TFEQ-R, (Stunkard & Messick, 1985), dieters with either low or high disinhibition (Westenhoefer, 1991), and for the Dutch Eating Behavior Questionnaire Restraint Scale, DEBQ-R, (Van Strien, Frijters, Bergers, & Defares, 1986), dieters with either low or high overeating tendencies (Van Strien, 1997b), have been distinguished. Only restrained eaters with high disinhibition scores showed overeating after an experimentally induced preload (Westenhoefer, Broeckmann, Munch, & Pudel, 1994). Similarly, restrained eating no longer significantly predicted food consumption when the variance attributable to overeating was removed (Van Strien, Cleven, & Schippers, 2000). Thus, the tendency toward overeating appears to be a crucial variable that may mask or even reverse the relation between dieting scales and weight loss (Van Strien et al., 2006).

A psychometric study on the TFEQ-R showed that dieters with either low or high disinhibition displayed different sets of restraint behaviors (flexible versus rigid) (Westenhoefer, 1991). In the current psychometric study we focus on the DEBQ-R, which assesses both intentions to restrict food intake (3 items) and actual behavioral restraint (7 items). The theory of planned behavior (Ajzen, 1991), a social cognition model that has been applied to many health-related behaviors, including healthy eating and dieting (Conner & Norman, 1996; Hagger, Chatzisarantis, & Harris, 2006), suggests that health intentions and behaviors are related but separate constructs. For the DEBQ-R, the distinction between intention and behavior may be crucial to validly assess true weight-loss dieting (high behavioral restraint) and perceived weight-loss dieting (high intentional restraint without high behavioral restraint). We hypothesize that more restrained behavior

(RB) is associated with a lower Body Mass Index (BMI) and less overeating tendencies, while more restrained intention (RI) (without RB) is associated with a higher BMI and more overeating tendencies.

Previous studies on general adult and student samples have shown that the DEBQ-R is a reliable instrument with all items (intentions and behaviors) loading highly on a single factor (Allison, Kalinsky, & Gorman, 1992; Laessle, Tuschl, Kotthaus, & Prike, 1989; Ogden, 1993; Van Strien, 1997a; Van Strien, Frijters, Bergers et al., 1986). A substantial proportion of the adult population is not weight-concerned (Timperio, Cameron-Smith, Burns, & Crawford, 2000) and does not restrict eating (Jeffery et al., 1991). This may complicate a reliable distinction between RIs and RBs. We hypothesize that the DEBQ-R will show a two-factor structure with factors representing intention and behavior to restrict food intake among a predominantly weight-concerned population with people from different (over)weight categories.

The current investigation is the first factor-analytic study to examine psychometric characteristics of the DEBQ-R among a predominantly weight-concerned population with people from different (over)weight categories. Confirmatory factor analytic methods were used, which allowed for (1) a priori specification of alternative factor models (a two-factor structure versus the original one-dimensional structure), (2) statistical tests to evaluate the fit of the specified model, and (3) testing the equivalence of the DEBQ-R across three different sub-samples (each sub-sample was heterogeneous as regards weight). Convergent validity was examined to provide insight in the relation of the DEBQ-R with the BMI and overeating tendencies (emotional and external eating), as indicators of more or less successful dieting efforts.

Methods

Participants

Recruitment

People were recruited in three ways: through advertisements entitled “no more dieting?” in local newspapers, through advertisements in an obesity journal of the Dutch obese patients’ association, and by intake screening in an obesity clinic. In the advertisements, people were offered a personal eating diagnosis in return for their participation. By this recruitment, we assembled a predominantly weight-concerned group with people from different (over)weight categories. After 14 respondents were excluded (due to incomplete questionnaires), the total group consisted of 790 individuals.

Characteristics

Table 1 provides an overview of demographic and weight data of our participants. Most of our participants reported a desire to be thinner and to have dieted in the past year (Table 1). Although all weight categories were represented

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