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Interactive effects of stress, dietary restraint, and disinhibition on appetite

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Abstract

Previous laboratory studies of disinhibited eating in response to stress have had varied outcomes. Since recent research implies that disinhibited eating might be observed when using the Three-Factor Eating Questionnaire restraint (TFEQ-R) measure when scores on the TFEQ disinhibition (TFEQ-D) scale were also used, the present study investigated the disinhibitory effects of stress on eating in women classified using both TFEQ-R [high R (HR) vs. low R (LR)] and TFEQ-D [high D (HD) vs. low D (LD)] scores. Twenty women in each restraint (R) or disinhibition (D) combination were tested in either a stress or no-stress condition followed by a test lunch. Women classified as LR-HD consumed more than the other groups in the no-stress condition and reduced intake in response to stress, whereas HR-HD and LR-LD both ate more in the stress than no-stress conditions. HD consumed more sweet foods regardless of stress, whereas HR ate less savoury foods than LR. Mood data confirmed the success of the stress manipulation on affective state and also suggested that HD were more responsive to stress. Overall, these data imply that tendency to overeat, as measured by the TFEQ-D scale, is a better predictor than restraint in predicting short-term eating in response to stress.

Keywords: Stress; Dietary restraint; Disinhibition on appetite

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1. Introduction

Dietary restraint describes the cognitively mediated effort individuals make to restrict food intake in order to control body weight (Herman & Mack, 1975). Herman and Polivy (1980) claimed that women who score high on measures of restraint (HR) are ultimately unsuccessful at restricting food intake and develop abnormal eating patterns characterised by dieting followed by periodic overeating. This periodic overeating is believed to be due to certain events, "disinhibitors," which trigger an overeating episode. The experience of stress has been shown to be one such disinhibitor (for a review, see Greeno & Wing, 1994). However, the outcome of previous research evaluating the effects of stress on eating in HR has varied depending on the measure of restraint used. Studies using the traditional measure of restraint, the Revised Restraint Scale (RRS) (Herman & Polivy, 1980), generally report disinhibited eating by HR women in response to a stressor (e.g., Herman, Polivy, Lank, & Heatherton, 1987; Ruderman, 1985); whereas studies using the restraint scale of the Dutch Eating Behaviour Questionnaire (DEBQ) (Van Strein Frijters, Bergers, & Defares, 1986) or the Three-Factor Eating Questionnaire (TFEQ) (Stunkard & Messick, 1985) have not found disinhibited eating in HR (for example, see Oliver Wardle, & Gibson, 2000; Ridgway & Jeffrey, 1998; Steere & Cooper, 1993). A possible explanation for the latter results comes from the suggestion that individuals with high TFEQ-R or DEBQ-R scores consist of both successful dieters and individuals who are likely to diet and overeat (i.e., unsuccessful dieters; Lowe & Maycock, 1988; Tuschl, 1990). Westenhoefer (1991), Westenhoefer, Broeckmann, Munch, and Pudel (1994), Westenhoefer, Pudel, and Maus (1990), and Westenhoefer, Stunkard, and Pudel (1999) suggest that one way to differentiate these two groups of dieters is by assessing scores on the TFEQ disinhibition (D) scale with high D (HD) associated with unsuccessful dieting and low D (LD) associated with successful dieting. Accordingly, Westenhoefer et al. (1994) replicated Herman and Mack's (1975) preload study with subjects categorised into four subgroups: HR-HD, HR-LD, LR-HD, and LR-LD, and reported that only the HR-HD group ate more (disinhibited) in response to a preload, while all other groups ate slightly less after the preload. Moreover, the HR-LD group ate significantly less than the HR-HD group in both preload and no-preload conditions, reinforcing the concept that HR individuals exhibit different behavioural strategies in relation to eating, which are reflected in the level of "disinhibition" as measured by the TFEQ-D.

The present study investigated whether the reason for a "failure" to find disinhibited eating in response to stress in HR women categorised according to the TFEQ was due to differences in levels of "disinhibition" within LR and HR individuals. Hence, women were categorised into four groups on the basis of both TFEQ-R and TFEQ-D, and they participated in either a stress condition or control (no stress) condition, after which they consumed a multi-item meal. We predicted that only individuals classified as HR-HD would eat more in response to induced stress. Since the TFEQ-D specifically assesses overeating in response to stress (for example, "When I feel anxious, I find myself eating"), it was also predicted that LR-HD would increase their food intake in the stress compared to control condition.