



Research report

Successful and unsuccessful restrained eating. Does dispositional self-control matter?



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ABSTRACT

In a random sample ($N = 1078$) from the general population, this study examined whether individual differences in dispositional self-control can explain restrained eaters' success in controlling their weight. A regression analysis with body mass index (BMI) as dependent variable revealed a significant negative association between dispositional self-control and BMI, and a significant positive association between dietary restraint and BMI. These effects were qualified by a significant interaction between restraint and self-control. Among restrained eaters, the association between self-control and BMI was significantly more negative than among normal eaters. Furthermore, among female restrained eaters higher dispositional self-control scores were associated with BMIs within the normal-weight range ($BMI < 25$) and lower dispositional self-control scores were associated with BMIs within the overweight range ($BMI > 25$). Among male restrained eaters very high scores on dispositional self-control were associated with BMIs within the normal-weight range, whereas medium or low scores on self-control were associated with BMIs within the overweight range. Results suggest that high dispositional self-control facilitates successful restrained eating.

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Introduction

In most Western countries, energy-dense foods that are high in fat and sugar are easily available everywhere and most of the time. This food-rich environment constantly evokes the temptation to eat. An increased intake of energy-dense foods is therefore one of the main causes of the globally increasing obesity and overweight among children and adults (WHO, 2000, 2012). There are large individual differences, however, in how well individuals can resist food temptations (Soetens, Braet, Van Vlierberghe, & Roets, 2008). Moreover, even if people try to restrain their food intake, they may not be able to successfully reduce their weight or maintain their weight loss in the long run (Mann et al., 2007). Dispositional self-control may be one important dispositional resource whereby individuals in a food-rich environment resist eating too much of the tempting foods around them (Johnson, Pratt, & Wardle, 2012).

A food-rich environment poses a particular challenge to people who restrain their food intake in order to control their weight. The crux of the matter is that those very people who aim to restrain their food intake in order to control or lose weight are at the same time most tempted by energy-dense foods (van Koningsbruggen, Stroebe, & Aarts, 2011). Recent research is encouraging so far, having shown that there are some restrained eaters who can successfully control their weight (Stroebe, van Koningsbruggen, Papies, &

Aarts, 2013). An important question related to this topic is how successful restrained eaters differ from unsuccessful restrained eaters (Stroebe et al., 2013). The present study examined whether individual differences in dispositional self-control may explain the variation in restrained eaters' success in controlling their weight.

Psychological processes underlying restrained eating

Restrained eaters are defined as chronic dieters who aim to restrict their food intake in order to lose or control their weight (Herman & Polivy, 1980). However, restrained eaters often fail to achieve their goal (Stroebe et al., 2013). Experimental research revealed that the difficulty in regulating food intake was caused by a conflict between the two incompatible goals of eating enjoyment (e.g., rewarding effects of high-energy foods) and weight control (Stroebe, Mensink, Aarts, Schut, & Kruglanski, 2008; Stroebe et al., 2013). In normal circumstances, restrained eaters seem to automatically devalue tempting foods; repeated confrontations with tempting foods impair self-control, however, and restrained eaters become responsive to tempting foods (Hofmann, van Koningsbruggen, Stroebe, Ramanathan, & Aarts, 2010), resulting in overconsumption when confronted with attractive foods (Fedoroff, Polivy, & Herman, 2003). In contrast, unrestrained, or better called "normal eaters" (Stroebe et al., 2013), reduce their hedonic response to tempting food over time (Hofmann et al., 2010) and have a balanced and conflict-free relationship with eating and with palatable high-energy food (Keller & van der Horst, 2013).

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Psychological processes underlying successful restrained eating

What is the secret of restrained eaters who manage to control their body weight? Recent research suggests that they have learned to successfully resist tempting foods (Stroebe et al., 2013). In successful and unsuccessful restrained eaters, different psychological processes are evoked when they are exposed to good-tasting foods. Both, successful and unsuccessful restrained eaters are tempted by palatable food (van Koningsbruggen et al., 2011). However, whereas unsuccessful restrained eaters disinherit their diet goal in response to tempting food, successful restrained eaters activated their diet goal instead (Papies, Stroebe, & Aarts, 2008). Successful restrained eaters had less desire for high-calorie food (Ouweland & Papies, 2010), could better translate their intention to eat healthy foods into actual healthy eating behavior (Papies et al., 2008), and worked harder for low-calorie food when confronted with tempting food (van Koningsbruggen, Stroebe, & Aarts, 2012, December 27) than unsuccessful restrained eaters.

It has been suggested that restrained eaters have become successful because they experienced successful self-control by being able to resist in earlier tempting situations (Fishbach, Friedman, & Kruglanski, 2003), and thus formed an associative link between temptation and thoughts of dieting (Papies et al., 2008; Stroebe et al., 2013; van Koningsbruggen, Stroebe, & Aarts, 2013; van Koningsbruggen et al., 2011). Low levels of trait impulsiveness seem to help restrained eaters become successful (van Koningsbruggen et al., 2013). Low impulsiveness may enable restrained eaters to exert more self-control when confronted with tempting foods, and as a result, thoughts of dieting are evoked (Papies et al., 2008; van Koningsbruggen et al., 2011, 2013). In line with this reasoning, one would expect that a high level of dispositional self-control is an important trait for an individual to become a successful restrained eater who can control his or her weight. However, the combined impact of dispositional self-control and restrained eating on individuals' body mass index (BMI) has not been examined.

The concept of dispositional self-control

Self-control is defined as the ability to override or change one's inner responses and to interrupt undesired behavioral tendencies (such as impulses) and refrain from acting on them (Tangney, Baumeister, & Boone, 2004). Another independent line of research (Patton, Stanford, & Barratt, 1995) considers dispositional self-control and trait impulsiveness the endpoints of the same concept (de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012; Duckworth & Kern, 2011). Trait impulsiveness is defined as failure of planning, spontaneous decision making, and acting without thinking (Patton et al., 1995) and is widely used as generic measure of (lack of) self-control (de Ridder et al., 2012; Duckworth & Kern, 2011). However, a meta-analysis (de Ridder et al., 2012) comparing both lines of research revealed that the self-control scale (Tangney et al., 2004) performed better in a more differentiated analysis of the self-control behavior relationship compared with other self-control measures. Furthermore, studies using the self-control scale (Tangney et al., 2004) revealed larger and more homogenous associations between self-control and different types of behaviors compared with studies using other self-control measures (de Ridder et al., 2012). Therefore, in the present study we used the self-control scale (Tangney et al., 2004).

Dispositional self-control, food choices, and eating behavior

Previous research on dietary restraint and self-control has run parallel with little overlap (Johnson et al., 2012). As a result, little is known about the interplay between restraint eating, dispositional self-control, and successful or unsuccessful weight control.

Self-control is negatively correlated with restrained eating (Williams & Ricciardelli, 2000), indicating that restrained eaters tend to have lower dispositional self-control compared with normal eaters. However, a substantial impact of dispositional self-control on eating behavior was found (de Ridder et al., 2012): A high level of self-control was associated with less binge eating and less alcohol consumption compared with a low level of self-control (Tangney et al., 2004). Young adults with high self-control spent less money on snacks and soft drinks compared to those with low self-control (Junger & van Kampen, 2010). A lack of dispositional self-control combined with a strong tendency to regulate negative affect by eating was associated with an unhealthier dietary pattern (Sproesser, Strohbach, Schupp, & Renner, 2011). Individuals with high dispositional self-control ate fewer calories, exercised more, and lost more weight during a weight loss program than individuals with low dispositional self-control, suggesting that self-control is particularly effective for changing behavior in desired ways (Crescioni et al., 2011).

Rationale of the present study

To the best of our knowledge no study has examined whether self-control in combination with restrained eating influences BMI. Self-control could be especially important for restrained eaters, because this trait may help them cope with the temptations evoked by attractive foods. High dispositional self-control may help restrained eaters better change inner responses to tempting food and maintain their diet goal, and thus eat less high-calorie food and better control their BMI. In contrast, low dispositional self-control may make it harder for restrained eaters to successfully maintain resistance in tempting food situations. Accordingly, these individuals eat more high-calorie food and are thus less able to control their BMI. Thus, dispositional self-control may be a relevant factor when it comes to distinguishing successful restrained eaters with a lower or normal BMI from unsuccessful restrained eaters with a higher BMI.

For normal (unrestrained) eaters, dieting is not a primary goal (Stroebe et al., 2013), either because they are not overweight or because they do not care about their weight (van Koningsbruggen et al., 2013). Normal eaters respond less hedonically to palatable food when they are repeatedly tempted with high-calorie food (Hofmann et al., 2010); thus, they are less challenged than restrained eaters when it comes to permanently resisting and exerting self-control in tempting situations. Therefore, dispositional self-control may be a less relevant factor to differentiate normal eaters with lower or normal BMI and normal eaters with a higher BMI.

Based on research in the general population, restrained eating should be positively associated with BMI (Johnson et al., 2012), and dispositional self-control should be negatively associated with BMI (Crescioni et al., 2011). Furthermore, we predict an interaction between restrained eating and self-control. For highly restrained eaters, self-control should have a stronger impact on BMI compared with normal eaters. As males and older people tend to have a higher BMI compared with women and younger people, gender, and age need to be controlled for.

Method

Participants

Questionnaires and accompanying letters were sent to a random sample of addresses from the telephone book for the German-speaking part of Switzerland. It was requested the person in the household who was over 18 years of age and next in line for

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