



Research report

Eating behavior, restraint status, and BMI of individuals high and low in perceived self-regulatory success



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ABSTRACT

The Perceived Self-Regulatory Success (PSRS) scale was developed to assess self-reported success at dieting and has been used to differentiate between successful and unsuccessful dieters (Fishbach, Friedman, & Kruglanski, 2003). We re-analyzed data from seventeen studies in order to examine whether PSRS predicted in-lab eating behavior of restrained and unrestrained eaters. We also explored the relation between body mass index, restraint, current dieting, and responding on the PSRS scale. It was found that successful dieters do not necessarily eat less than do unsuccessful dieters when a tempting food is available. Additionally, individuals who considered themselves to be successful dieters were more likely to be unrestrained eaters and current non-dieters than restrained eaters and current dieters. However, regardless of restraint status, individuals high in PSRS had lower BMI than those low in PSRS. These findings suggest that those who score high on the PSRS scale may not be concerned with regulating eating and weight. However, the restrained eaters who do score high on the PSRS scale appear to be successful at controlling their weight, despite not eating less in the lab.

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Introduction

Considering the high rate of overweight and obesity, it is not surprising that many people attempt to lose weight. Using data from the National Health Interview Survey, Kruger, Galuska, Serdula, and Jones (2004) reported that 24.3% of men and 37.6% of women in the U.S. are trying to lose weight. These weight-loss attempts often end in failure. Although many people experience early weight-loss success, dieters often regain the weight they had initially lost (Crawford, Jeffery, & French, 2000). However, some dieters are successful at maintaining weight-loss. In one study, thirteen to 20% of dieters were found to be successful at maintaining a weight-loss of 5 kg or more over five years (Wing & Phelan, 2005), while an earlier study found that up to 67% of weight-losers reported maintaining their weight-loss (Schachter, 1982).

In recent years, increasing attention has been paid to successful dieting. These research efforts have focused on teasing out the differences between successful and unsuccessful dieters. In an interview study, for example, Chambers and Swanson (2012) examined the behavioral and psychological factors associated with dieting success and failure. They found differences between successful and unsuccessful dieters in frequency of weighing, weight-loss strategies, and reactions to weight-loss setbacks.

Therefore, it appears that successful and unsuccessful dieters differ in many ways. It is important to continue to study successful dieting and to determine factors associated with successful dieting that may influence eating behavior. Interest in successful dieting has made finding a way to measure dieting success increasingly important. The Perceived Self-Regulatory Success (PSRS) scale is a self-report measure of perceived dieting success (Fishbach, Friedman, & Kruglanski, 2003). The scale consists of three items, including “To what extent... (1) are you successful at watching your weight?... (2) are you successful in losing extra weight?... and (3) do you find it difficult to stay in shape? (reverse coded). Participants respond to the items using a 7-point Likert scale. Participants scoring one or more standard deviation above the mean are considered to be successful self-regulators and participants scoring one or more standard deviation below the mean are considered to be unsuccessful self-regulators. Several studies have used the PSRS scale to examine the role of perceived self-regulatory success in dieters’ behaviors and psychological processing. However, none of these studies has examined how PSRS is related to actual eating. Further, although the PSRS scale is purported to measure success at dieting, there is no measure of dieting attached to the scale. Previous research has used various measures to determine and define dieting status. Therefore, there is a lack of consistency in how dieting is determined when using the PSRS scale. This lack of consistency may lead to non-dieters being included in analyses of successful dieters in some studies.

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Perceived self-regulatory success in the literature

Fishbach et al. (2003) found that after exposure to a tempting food prime, individuals who valued dieting more than others did responded more quickly to diet-related words if they were high in PSRS (successful dieters), but not if they were low in PSRS (unsuccessful dieters). There was no difference in reaction time following a neutral prime. Similarly, restrained eaters (determined using the Restraint Scale; Polivy, Herman, & Howard, 1988) who were low in PSRS exhibited quicker reaction time when identifying high caloric foods than restrained eaters high in PSRS, demonstrating that unsuccessful restrained eaters have an attentional bias towards diet-breaking foods, while successful restrained eaters do not (Meule, Vogeles, & Kubler, 2012).

Further, Van Koningsbruggen, Stroebe, and Aarts (2011) measured dieting status using the Concern for Dieting Subscale of the Restraint Scale, and studied successful and unsuccessful dieters' size perception of palatable and diet food after exposure to a tempting food cue. Study 1 indicated that objects related to an individual's goal are perceived as larger. In this case, dieters exposed to a food cue estimated the size of a chocolate muffin to be larger than did those dieters not exposed to a food cue. Study 2 examined how perceived self-regulatory success influenced size perception of a diet food (apple) after exposure to a diet food, tempting food, or a control prime. Successful dieters perceived the apple as bigger after exposure to the diet and food primes, as compared to those in the control condition. Unsuccessful dieters perceived the apple as bigger when exposed to the diet prime, but smaller when exposed to the food prime, than did those in the control prime condition. These findings suggest that successful dieters access the dieting goal when primed with dieting and when primed with eating.

Additional evidence suggests there are some individual difference variables associated with success in dieting. For example, Van Koningsbruggen, Stroebe, and Aarts (2013) recently found that trait impulsivity is negatively related to dieting success among restrained but not unrestrained eaters. Further, increased cardiac regulation is associated with increased PSRS in current dieters but not current non-dieters (Meule, Lutz, Vogeles, & Kubler, 2012b). This finding suggests that cardiac control may be one physiological characteristic associated with successful self-regulation in dieting.

Further research has examined the role of perceived self-regulatory success in dieters' behaviors. Rigid control of eating is related to low scores on the PSRS and food cravings, whereas scoring high on the PSRS scale is associated with flexible control (Meule, Lutz, Vogeles, & Kubler, 2012a; Meule, Westenhofer, & Kubler, 2011). Further, Papies, Stroebe, and Aarts (2008) examined whether perceived self-regulatory success in dieting is associated with greater adherence to a dieting plan over the course of two weeks. Among unrestrained eaters, intention to avoid five palatable foods was related to lower frequency of eating the foods. Among restrained eaters, intention predicted diet adherence of successful restrained eaters, but not unsuccessful restrained eaters. Similarly, Van Koningsbruggen, Stroebe, Papies, and Aarts (2011) studied the effect of implementation intentions on eating behavior over a two-week period. Participants were restrained and unrestrained eaters (measured using the Restraint Scale–Concern for Dieting subscale) and were assigned to one of three conditions: a diet-implementation condition, in which they were to think about their diet whenever they encountered a tempting food; a no-eating implementation intention, in which they were to think about not eating the tempting food; or a control condition. There was a condition effect on restrained eaters who were low in PSRS only, in that those in the diet-implementation intention condition ate the target foods less frequently than did those in the other two conditions. It was concluded that diet-implementation intentions

help restrained eaters low in PSRS to decrease consumption of tempting foods. The authors argued that restrained eaters high in PSRS may automatically activate the diet goal in the face of temptation, without the use of (or need for) implementation intentions.

Thus, the literature suggests that the perceived self-regulatory success scale is a valid measure of dieting success as indicated by cognitive measures of attention to diet words and perceived size of food items, although its ability to predict avoidance of tempting foods was less convincing (only unsuccessful dieters claimed to avoid temptations). No study has yet examined the eating behavior of successful and unsuccessful dieters in a controlled lab environment, or even measured intake outside the lab. In order to determine the role of perceived self-regulatory success in predicting actual eating behavior, the present report examined data from seventeen studies that measured eating behavior in a lab setting. It was hypothesized that successful self-regulators would eat less than unsuccessful self-regulators.

Further, the relation between restraint status and current dieting status, one's score on the PSRS scale, and Body Mass Index (BMI) was explored. It is apparent in the literature that, although perceived self-regulatory success seems to predict various diet-type behaviors, there has been no consistent measure of dieting used in conjunction with the PSRS scale. Several studies (Meule, Papies, & Kubler, 2012; Meule, Vogeles, et al., 2012; Meule et al., 2012a; Meule et al., 2012b; Papies et al., 2008; Van Koningsbruggen et al., 2011; Van Koningsbruggen et al., 2013; Van Koningsbruggen, Stroebe, Papies, et al., 2011) used the Restraint Scale (Polivy et al., 1988) or a subscale of the Restraint Scale. On the other hand, Fishbach et al. (2003) used an author-developed measure of diet valuing. Meule et al., 2011 used measures of rigid and flexible control of eating and Meule, Lutz, Vogeles, and Kubler (2012) used a single item measure of current dieting (yes/no) to determine whether or not participants were dieters. Thus, it is unclear whether successful dieters were true dieters in all of the studies. In our studies, we used the Restraint Scale (Polivy et al., 1988), which measures chronic dieting, and also a one-item measure of current dieting to determine dieter status. Restrained eating and current dieting status should be related to successful dieting on the PSRS scale, so this will be assessed in the current data set.

Method

Overview

Data from seventeen studies in our lab that included the PSRS scale were re-analyzed. These studies examined the influence of various factors on participants' eating behavior. Each study manipulated variables intended to increase or decrease eating in restrained eaters. See Table 1 for details on the studies. For the purpose of the present analyses, the studies' manipulations were coded as “intended to increase eating”, “intended to decrease eating”, and “control.” These studies were all conducted in a lab setting and involved eating in the guise of a taste test. The taste test was always standardized to 10 min. Participants were told to taste and rate a food (cookies, chocolate candies, or chips, depending on the experiment); they were told that they could eat as much as they wanted.

Participants

Participants in all of the studies were undergraduate students. In all, data from 620 participants were included in the analyses; 253 were restrained eaters (231 females, 22 males) and 367 were unrestrained eaters (341 females, 26 males). Three-hundred and thirty-five of the participants were classified as high in perceived self-regulatory success (298 females, 37 males) and 286 were

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