Won’t stop or can’t stop? Food restriction as a habitual behavior among individuals with anorexia nervosa or atypical anorexia nervosa

Kathryn A. Coniglioa, Kendra R. Becketab, Debra L. Franko ac, Lazaro V. Zayas ab, Franziska Plessow de, Kamryn T. Eddy a,b,1, Jennifer J. Thomas a,b,⁎

Eating Disorders Clinical and Research Program, Massachusetts General Hospital, United States
bDepartment of Psychiatry, Harvard Medical School, United States
cBouvé College of Health Sciences, Northeastern University, United States
dNeuroendocrine Unit, Massachusetts General Hospital, United States
eDepartment of Medicine, Harvard Medical School, United States

Abstract

Food restriction among individuals with anorexia nervosa (AN) is regarded as a goal-directed behavior. However, Walsh (2013) theorized that, although restriction is initially maintained by operant conditioning (with successful weight loss and external praise as salient rewards), it ultimately becomes a classically conditioned habit, persisting regardless of the presence of these once-salient rewards. Understanding food restriction as a well-ingrained habit may provide insight into treatment resistance. Further, it is not clear whether habitual food restriction is present among individuals with atypical AN (i.e. who engage in food restriction but are not low-weight). This study evaluated whether strength of habit predicted self-reported restriction above and beyond cognitive restraint. Seventy-eight individuals with AN or atypical AN completed the Eating Pathology Symptoms Inventory Restriction (EPSI-R) and Cognitive Restraint (EPSI-CR) subscales and the Self-Report Habit Index (SRHI) adapted for food restriction. We used a hierarchical multiple regression model to test whether habit strength predicted food restriction above and beyond cognitive restraint. After adding illness duration (step 1) and diagnosis (step 2) to the model, cognitive restraint (step 3) was not significant in explaining variation in restriction, whereas adding habit strength to the model (step 4) explained 27.9% of the variance in restriction (p < 0.001). This is the first study to test a key component of Walsh’s theory. Results provide support for food restriction maintenance through habit, rather than through effortful cognitive restraint. Because current models of AN characterize food restriction as purposeful, further research is needed to better understand habitual restriction in AN.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

A hallmark feature of anorexia nervosa (AN) is food restriction leading to significantly low body weight (American Psychiatric Association, 2013). Individuals with atypical AN (an Other Specified Feeding or Eating Disorder; OSFED) also engage in food restriction, despite not being underweight (American Psychiatric Association, 2013). Individuals with AN or atypical AN may restrict food intake by limiting the overall amount they eat (e.g., a preset calorie limit for each meal), eliminating types of food they eat (e.g., limiting carbohydrates or desserts), or by cutting back on the frequency of meals or snacks (e.g., skipping lunch; Fairburn, 2008). Increasing or re-distributing food intake to a more normalized schedule (thereby reducing restriction) is therefore a common initial goal in enhanced cognitive-behavioral therapy (CBT-E) for eating disorders, in order to prevent further weight loss and to lay the foundation for weight gain. And yet, restriction is often a challenging behavior to change, even in the most motivated patients.

In 2013, Walsh theorized that habit can explain the often relentless persistence of food restriction. Rather than conceptualizing restriction as goal-directed restraint, he proposed that persistent restriction is the result of a well-ingrained, maladaptive habit that has been reinforced during the course of illness. At the onset of illness, food restriction is maintained operantly by highly salient rewards (such as a perceived sense of control and accomplishment, external praise, and successful weight loss). Over time, food restriction itself becomes maintained through classical conditioning, as repeated pairings allow the individual to associate food restriction with these rewards, regardless of whether the reward is actually presented. According to this theory, food restriction may start out as a “top-down” cognitive process (whereby conscious motivation drives the behavior) by which effortful restraint...
leads to successful restriction. Eventually, food restriction becomes a “bottom-up” process (whereby rewarding sensory input drives the behavior), requiring minimal, if any, conscious effort. In other words, it is not that the individual with AN “won’t stop” restricting; rather, the individual “can’t stop.” Therefore, once the habit has taken root, food restriction becomes inextricably paired with eating despite its success or failure in leading to weight loss (i.e. outcome independent), and thus resistant to change (Steinglass & Walsh, 2006). Importantly, although habits typically occur in the absence of conscious effort, research has shown that self-report measures of habit correlate with frequency of the habitual behavior (Verplanken & Orbell, 2003). In other words, individuals are valid and reliable reporters of the degree to which their own habits are automatic.

That individuals with AN show a bias toward developing reward-based habits has been linked to neural mechanisms (Steinglass, Foerde, Shohamy, & Walsh, 2016). On the other hand, one recent study found that neither individuals with AN nor individuals who had since recovered from AN differed from healthy controls in their vulnerability to developing habitual responding during a computer slip-of-action task (Godier et al., 2016). However, it is possible that while generalized habitual responding does not differ in individuals with AN from healthy individuals, perhaps disorder-specific behaviors (such as food restriction) do become habitual more quickly than they do in healthy individuals.

With regards to individuals who engage in food restriction but are not underweight, previous literature suggests that levels of impairment or eating pathology do not differ between full threshold and subthreshold eating disorders (Fairweather-Schmidt & Wade, 2014; Thomas, Vartanian, & Brownell, 2009). For individuals who are not underweight but still exhibit fear of weight gain (criterion B) and body image distortion (criterion C), a diagnosis of OSFED atypical AN is likely appropriate, so long as the individual does not meet full criteria for any other eating disorder is DSM-5. Although Walsh’s model exclusively focused on individuals with full threshold AN (i.e., low-weight), no studies to date have examined whether individuals with atypical AN similarly engage in habitual restriction.

It is important to note that restriction and restraint are distinct. Restraining (or, dietary restraint) refers to the effortful attempt to limit food intake, whether or not the individual is successful (Polivy & Herman, 1985). Restriction, in contrast, is the successful avoidance of food, or the reduction of caloric intake (American Psychiatric Association, 2013). Not surprisingly, previous research has shown that measures of restraint are inaccurate measures of restriction (Stice, Cooper, Schoeller, Tappe, & Lowe, 2007), and scores on dietary restraint scales are not correlated with actual caloric intake (Stice, Fisher, & Lowe, 2004). Thus, restraint does not always indicate successful restriction. Indeed, restraint is actually associated with binge eating frequency (Andrès & Saldaña, 2014) and adiposity in individuals of normal weight (De Lauzon-Guillain et al., 2006). Further, those who engage in successful restriction may not engage in effortful restraint. Newer measures of eating pathology, such as the Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013), distinguish the constructs with two separate subscales. Although these subscales are moderately correlated (r = 0.30, p < 0.001), they are not isomorphic. In sum, restraint and restriction are two separate constructs, and the distinction is critical for this study.

To our knowledge, this is the first study to test a key component of Walsh’s theory that habit strength maintains food restriction more than effortful, goal-directed dietary restraint. Walsh indicates that habit sets in with illness duration. However, we wanted to test whether habit predicted restriction even after controlling for illness duration. We hypothesized that habit strength would predict food restriction above and beyond illness duration, diagnosis (i.e., AN versus atypical AN), and cognitive restraint. Our secondary aim was to test the hypothesis that strength of habitual food restriction would predict clinical impairment, above and beyond diagnosis and cognitive restraint.

2. Methods

2.1. Participants

Participants were individuals aged 12 years and older who sought treatment in a hospital-based outpatient eating disorder clinic from 2013 to 2016. Participants completed a questionnaire battery prior to beginning treatment and provided informed consent (or, if under 18, assent plus parental consent) for their data to be used for research purposes. Doctoral level clinicians assigned diagnoses after a full clinical evaluation. Clinicians assigned a diagnosis of atypical AN only when no other full threshold diagnosis was appropriate. Seventy-eight individuals were diagnosed with either AN (n = 53) or atypical AN (n = 25), and were therefore included in this study.

2.2. Procedures

Questionnaires were sent to participants via password-protected email and completed prior to the evaluation appointment. Participants under age 18 had the option to complete the battery with parental assistance to ensure that they understood the questions. Individuals in the study were diagnosed by a trained and licensed clinician following their evaluation appointment, based on DSM-5 criteria. Patients were weighed during the evaluation to establish significantly low weight (criterion A), and were asked specifically about persistent behavior that could interfere with weight gain (criterion B) and body image disturbance (criterion C). If an individual did not meet criterion A but did meet criteria B and C, he or she was diagnosed with atypical AN. The Partners Human Research Committee reviewed and approved the study annually.

2.3. Measures

2.3.1. Demographics

Participants self-reported sex, age, race, ethnicity, sexual orientation, education level, and illness duration, which was calculated by subtracting the date of the evaluation from the date of the first onset of symptoms.

2.3.2. Eating Pathology Symptom Inventory (EPSI)

The EPSI is a 45-item self-report measure of pathological eating behaviors and beliefs over the past four weeks (Forbush et al., 2013). For the current study, we used the Cognitive Restraint (EPSI-CR) and Restricting (EPSI-R) subscales only. The Cognitive Restraint (CR) subscale includes items such as “I tried to exclude ‘unhealthy’ foods from my diet” or “I tried to avoid foods with high calorie content.” The Restriction (R) subscale, conversely, includes items such as “People would be surprised if they knew how little I ate” or “I skipped two meals in a row.” Because individuals with atypical AN may be engaging in food restriction to the same degree as individuals with AN, they may have recently lost a great deal of weight, but are still not low-weight. Therefore, we used EPSI-R as an objective measure of food restriction rather than BMI or weight. Sum scores on the EPSI-CR range from 0 to 12 and sum scores on the EPSI-R range from 0 to 24. Internal consistency of the EPSI-CR (Cronbach’s α = 0.79) and EPSI-R (α = 0.88) subscales were acceptable and good, respectively, in the current sample.

2.3.3. Self-Report Habit Index (SRHI)

The SRHI comprises 12 items that measure the habit strength of a single behavior (Verplanken & Orbell, 2003). This behavior was defined in the current study as food restriction. Items were rated on a Likert scale from 1 (“agree strongly”) to 5 (“disagree strongly”), following Verplanken & Orbell’s suggestion to employ a minimum of 5 anchors. Further, because this study included both children and adults, we chose to design the SRHI using the minimum acceptable number of anchors, as is consistent with other child versions of standardized
دریافت فوری
متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات