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Thinness expectations and weight cycling in a sample of middle-aged adults

Erin A. Olson[*,a], **Amanda J. Visek**[a], **Karen A. McDonnell**[b], and **Loretta DiPietro**[a]

[a] Departments of Exercise Science School of Public Health and Health Services, The George Washington University, United States

[b] Prevention & Community Health, School of Public Health and Health Services, The George Washington University, United States

Abstract

Background—The False Hope Syndrome suggests that unrealistic expectations of dieting and weight loss are key constructs in the prediction of behavioral failure and may exacerbate weight cycling. The objective of this study was to determine cross-sectional associations among dieting and thinness expectations and weight cycling history within the framework of the False Hope Syndrome.

Methods—Participants were middle-aged (45±12 years) women (n=116) and men (n=98) recruited via worksite intranet distributions. Information on dieting and thinness expectations, weight loss attempts, and weight cycling history was gathered using standard questionnaires.

Results—More women than men reported currently dieting (43% vs. 26%; $p<0.01$). Moderate [OR=2.54; 95%CI: 1.01–6.45] and higher [OR=2.70; 95%CI: 1.07–6.80] levels of the thinness expectation score were significantly associated with the greater odds of weight cycling, independent of age, sex, BMI, and weight loss attempts.

Conclusions—These data are the first to extend the pervasive and potent influence of thinness expectancy to middle-aged persons and in particular, to men.

Keywords

Weight cycling; False hope syndrome; Thinness expectations

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* Corresponding author at: Department of Kinesiology and Community Health, University of Illinois at Urbana Champaign, Freer Hall, 906 S. Goodwin Ave, Urbana, IL 61801, United States. Tel.: +1 217 244 4510; fax: +1 217 333 3124. olson29@illinois.edu (E.A. Olson).
avisek@email.gwu.edu (A.J. Visek), sphkxm@gwumc.edu (K.A. McDonnell), esclxd@gwumc.edu (L. DiPietro).

Contributors

EAO: contributed to study conception and design; data collection; data management, analysis and interpretation; manuscript drafting and editing.
AJV: contributed to study conception and design; data interpretation; manuscript drafting and editing.
KAM: contributed to study conception and design and manuscript editing.
LD: contributed to study conception and design; data management, analysis and interpretation; manuscript drafting and editing.

Conflict of interest

All authors declare that they have no conflicts of interest.

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1. Introduction

Weight management is a significant public health challenge. Efforts to lose weight have become commonplace with reports of about half of the U.S. adult population dieting at any given time (Van Wye, 2005). Weight loss is difficult and many dieters report an optimistic bias toward a rapid and successful achievement of their goals (Foster, Wadden, Vogt, & Brewer, 1997). These unrealistic expectations are likely the cognitive foundation for behavioral failure, which in turn can exaggerate the original commitment to lose weight (Hohlstein, Smith, & Atlas, 1998). Unsuccessful weight management often leads to weight cycling — repeated weight loss and unintentional weight regain (Elfhag & Rössner, 2005; Powers, Rehrig, & Jones, 2007).

There is convincing evidence that women appear more susceptible to societal expectations of thinness than do their male counterparts (Cachelin, Veisel, Barzegarnazari, & Striegel-Moore, 2000; Henrickson, Crowther, & Harrington, 2010). The reported frequency of weight loss attempts is consistently higher in women than in men (Serdula et al., 1999). Weight cycling has a negative impact on both physiological and psychological morbidity (National Task Force on the Prevention and Treatment of Obesity, 1994), as well as on mortality (Diaz, Mainous, & Everett, 2005; Lissner et al., 1991; Rzehak et al., 2007). Efforts to understand specific psychosocial underpinnings have important clinical and public health implications.

The *False Hope* Syndrome (Polivy & Herman, 2008) is a cognitive–behavioral model that can be applied to the problem of dieting, weight loss expectations, and weight cycling. This model proposes a cycle of: (a) commitment to a behavior change goal; followed by (b) a failure to achieve or maintain the behavior change goal; (c) relapse to the previously established behavior; leading to (d) attributions for the failure; and finally (e) a recommitment to the original goals (Polivy & Herman, 2002). Underlying this cyclical phenomenon of failure and renewed effort to try again are unrealistic expectations regarding weight loss.

Dieting expectations refer to the perceived efficacy of a given regimen to induce weight loss (Polivy & Herman, 2002); whereas thinness expectations reflect unrealistic expectations of life improvement and success due to attained thinness (Hohlstein et al., 1998). Studies of outcome expectancies as predictors of actual weight outcomes generally report an inverse association between unrealistic dieting goals and weight loss success (Teixeira, Going, Sardinha, & Lohman, 2005). Unfortunately, few studies of weight cycling have focused on the role of dieting and thinness expectations in the repeated cycle of weight loss/weight regain, and to our knowledge, there are no such studies in men. Therefore, the purpose of this cross-sectional analysis was to determine the associations of dieting and thinness expectations with both weight cycling history and experience within the theoretical framework of the *False Hope Syndrome*.

2. Material and methods

A total of 245 adults responded to the recruitment e-mail distribution; however, 31 participants (13%) did not complete the online questionnaire battery resulting in a sample size of 214 people. Informed consent was obtained and study procedures were approved by the Institutional Review Board.

2.1. Measures

2.1.1. Dieting expectations—Two process-oriented questions were used concerning dieting expectations, which were based on the cognitive processes associated with major

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expectancy areas of dieting: 1) ease of weight loss and 2) speed of weight loss. Higher scores indicate greater dieting expectations.

2.1.2. Thinness expectations—The Thinness and Restricting Expectancy Inventory (TREI) was developed to measure cognitive expectations with regard to the consequences of food restriction and thinness (Hohlstein et al., 1998). The 44-item TREI assessed thinness outcomes. Item scores were summed so that with higher composite scores indicated greater expectations of thinness.

2.1.3. Weight cycling—The Brownell Weight Cycling Questionnaire (BWCQ: Foreyt et al., 1995) consists of two subscales: 1) weight cycling *history*, and 2) weight cycling *experience*. Participants reported life-time frequency of weight loss with unintentional regain of b10 lbs, 10–19 lbs, 20–49 lbs, 50–99 lbs, or ≥100 lbs. The number of episodes was then multiplied by the amount of weight lost/regained in each category and then summed over all categories to create a weight cycling history (total weight loss/regain) score that was expressed as lbs. Participants were reported adult lifetime frequency of weight loss attempt via dieting or any other method and this variable was used in all statistical modeling. The BWCQ also measured weight cycling experience — i.e., the individual's overall opinion of his or her ability to achieve and maintain weight loss, as well as the degree of emotionality experienced during weight cycling.

3. Results

As 32% of the study sample reported at least one weight cycling episode of 20 lbs or more, the sample was dichotomized into those who did and did not report such episodes, in efforts to increase the public health utility of the data. Statistical analysis software (SAS 9.1) was used for all analyses. The study sample was primarily Caucasian (92%), middle-aged, and of higher educational attainment (63% having a college degree or higher), with women being significantly younger than men (40±12 vs. 44±11 yrs; $p<0.05$). Sex-differences in BMI approached statistical significance (28.7±4.6 vs. 27.4±5.8 kg m^{-2}, $p<0.06$) for men and women, respectively. Overweight or obesity was present in 73% of the study sample, but was significantly higher in women (84%) compared with men (64%; $p<0.05$). Approximately 43% of the women reported currently dieting, compared with only 26% of the men ($p<0.01$).

3.1. Gender comparisons

Reported number of repeated weight loss attempts was significantly higher in women compared with men (10.3±11.8 vs. 7.2±8.9; $p<0.05$), as were thinness expectation (189.5±51.1 vs. 173.9±50.1; $p<0.03$) and weight cycling experience (13.2±3.1 vs. 11.2±3.1; $p<0.001$) scores. Men, on the other hand, reported significantly greater dieting expectation scores (5.89±1.49 vs. 4.45±1.27; $p<0.0001$). Women and men were similar with regard to number of cycling episodes ≥20 lbs and total lifetime weight loss/regain. The dieting and thinness expectation scales demonstrated a negligible correlation with each other in both men and women, suggesting that they are distinct psychological constructs.

Among women, both dieting and thinness expectations correlated positively with BMI (r=.59; r=.25), number of cycling episodes ≥20 lbs (r=.36; r=.34), total lifetime weight loss/regain (r=.31; r=.36), number of weight loss attempts (r=.23 for thinness expectations), and weight cycling experience score (r=.24; r=.50). Among the men, dieting expectations demonstrated a significant association with BMI and total lifetime weight loss/regain, while thinness expectations appeared more strongly correlated with weight loss attempts and weight cycling experience.

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3.2. Determinants of weight cycling

Among women, thinness expectations, BMI, and weight loss attempts were strong independent determinants of weight cycling experience score (Table 1), such that a greater BMI, higher thinness expectations, and more attempts at weight loss increased the psychological distress associated with weight cycling. Among men, dieting and thinness expectations, as well as BMI, significantly predicted a greater weight cycling experience. The regression estimate for the dieting expectation score was about 10-fold higher in men compared with women, suggesting that men may be more vulnerable to commercial claims of unrealistic weight loss.

Logistic regression modeling was used to determine factors that increased the odds of clinically significant weight cycling. Participants characterized as weight-cyclers lost and regained a total of 267 ± 246 lbs, which (as stated above) did not differ by sex. In the unadjusted analysis, dieting expectation score (5.5 ± 1.5 vs. 4.9 ± 1.5), thinness expectation score (203.2 ± 45.0 vs. 172.8 ± 51.0), reported weight loss attempts (13.2±14.1 vs. 6.8±7.8), and BMI (31.1±5.3 vs. 26.6±4.7 kg m^{-2}) were significantly higher in those who reported one or more episodes of weight cycling of 20 lbs or more compared with those who did not ($p<0.0001$). Factors were entered into two separate multivariable logistic regression models to determine their independent association of diet and thinness expectations to the odds of weight cycling (Table 2). In the presence of age, sex, BMI, and weight loss attempts, both moderate [OR=2.54; 95%CI: 1.01–6.45] and higher [OR=2.70; 95%CI: 1.07–6.80] levels of the thinness expectation score were significantly associated with a greater odds of weight cycling compared with thinness expectation scores in the lowest tertile. The data showed no significant association between dieting expectation score and the odds of weight cycling. There was no effect by sex/gender.

4. Discussion

The *False Hope Syndrome* model implies a disconnect between one's expectations and realistic abilities to achieve those expectations (Foster, Wadden, Phelan, Sarwer, & Sanderson, 2001; Linde, Jeffery, Finch, Ng, & Rothman, 2004; Polivy, 2001; Polivy & Herman, 2002). Thinness expectation is a distinct psychological construct relating to over-generalized expectations of personal and social success with attained thinness (Hohlstein et al., 1998). This construct has been studied primarily in girls and young women (Atlas, Smith, Hohlstein, McCarthy, & Kroll, 2002; Simmons, Smith, & Hill, 2002). This is the first study, however, to determine the associations between thinness expectations and weight cycling in middle-aged women and men.

Our findings suggest that men and women with greater thinness expectancies experienced greater amounts of weight cycling-associated emotional distress. Moreover, both moderate and higher categories of thinness expectancy score increased the odds of experiencing one or more episodes of weight cycling ≥20 lbs in this sample. These associations were not influenced by age, sex, BMI, or number of weight loss attempts, and underscore the potency of thinness expectations and desires on repetitive episodes of weight loss and regain.

Weight loss and thinness may be especially important to women, as there is evidence of a greater dieting frequency in women compared with men across several age and BMI strata (including among those classified as “normal” weight) (Serdula et al., 1999). We observed a significantly greater reported frequency of current dieting and previous weight loss attempts, as well as higher thinness expectancies and weight cycling-associated distress among women relative to the men. In contrast, we observed no sex-differences in mean number of weight cycling episodes or in total lifetime weight loss/regain, which corroborates findings reported by Van Wye, Dubin, Blair, and DiPietro (2007) using data from the Aerobics

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Center Longitudinal Study (ACLS). Similarly, there did not appear to be any consistent sex-differences in the magnitude of the associations between dieting or thinness expectation score and the weight cycling outcome variables of interest, which was contrary to our assumptions. We were surprised to observe that the multivariable association between dieting expectations and weight cycling experience was markedly greater among the men compared with the women in our sample. This novel and robust finding suggests that these middle-aged men were substantially more susceptible to weight cycle-related emotional distress with inflated expectations of dieting ease and speed compared to female counterparts.

The data presented here indicate that individuals with greater thinness expectancies experienced greater amounts of weight cycling-associated emotional distress. Moderate and higher categories of thinness expectancy score increased the odds of experiencing one or more episodes of weight cycling. Our results underscore the potency of thinness expectations and desires on repetitive episodes of weight loss and regain. Further, our results suggest that men are not immune to the psychopathological influence of these expectations on physical and psychological health. Fortunately, these results also suggest that there may be an opportunity to minimize the influence of thinness expectancies on weight cycling and the associated emotional distress through behavioral modification. In fact, outcome expectancies may be more amenable to change compared with other determinants of weight cycling, such as BMI or family history of obesity. For example, Boivin, Polivy, and Herman (2008) reported their ability to alter thinness-related expectancies in young, female restrained eaters by creating cognitive dissonance with regard to the rewards of thinness. This “expectancy moderation” technique challenges outcome expectations at the onset of a weight management program by using evidence-based counseling about a realistic speed of weight loss for sustained success and about the physical and psychological costs of excessive weight loss and regain. If both process and outcome expectations for weight loss are aligned appropriately with what can realistically be achieved, dieters may be less likely to experience the cyclical pattern of repeated weight loss and regain. Expectancy modification may offer means to promote healthier weight loss and thinness attitudes, which then translate into healthier weight loss practices and better long-term maintenance.

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No funding was provided for this study.

Abbreviations

BMI	body mass index
TREI	Thinness and Restricting Expectancy Inventory
BWCQ	Brownell Weight Cycling Questionnaire

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Table 1

Regression estimates (95% confidence intervals) predicting weight cycling experience score and total weight loss/regain in women (n = 115) and men (n = 98).

	Weight cycling experience score		Total weight loss/regain	
	Women	Men	Women	Men
	Estimate (95% CI)	Estimate (95% CI)	Estimate (95% CI)	Estimate (95% CI)
Age (y)	0.01 (–0.03 – 0.05)	0.02 (–0.03 – 0.07)	**2.25 (0.39 – 4.11)**	–1.10 (–4.43 – 2.23)
BMI (kgm^{-2})	**0.20 (0.12 – 0.28)**	**0.15 (0.04 – 0.26)**	**8.70 (4.82 – 12.59)**	0.77 (–7.27 – 8.80)
TREI score	**0.02 (0.01 – 0.03)**	**0.03 (0.02 – 0.04)**	0.19 (–0.27 – 0.65)	–0.58 (–1.32–0.16)
DE score	–0.05 (–0.47 – 0.39)	**0.50 (0.05 – 0.95)**	–10.46 (–31.5 – 10.6)	–18.16 (–51.3–15.0)
Weight loss attempts (#)	**0.05 (0.01 – 0.09)**	0.03 (–0.03 – 0.09)	**3.62 (1.33 – 5.62)**	**13.09 (8.8 – 17.38)**

The regression estimate represents the change in the dependent variable (total weight loss/regain or eight cycling experience score) per unit change in the study variable. TREI = Thinness and Restricting Expectancy Inventory; DE = Dieting Expectancy score; WC Exp = weight cycling experience score.

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Table 2

Adjusted logistic regression estimates of the association between thinness expectation (model 1), dieting expectation (model 2) and the odds of weight cycling episodes ? 20 lbs (9.1 kg).

Model 1	Maximum likelihood Estimate* (SE)	Model 2	Maximum likelihood Estimate (SE)
TREI score		**DE score**	0.096 (0.160)
Moderate	**0.934 (0.473)**		
Higher	**0.993 (0.473)**		
Age	0.024 (0.016)	**Age**	0.021 (0.016)
Sex	**0.884 (0.381)**	**Sex**	**1.114 (0.432)**
BMI	**0.186 (0.039)**	**BMI**	**0.175 (0.039)**
Weight loss attempts	**0.042 (0.018)**	**Weight loss attempts**	**0.047 (0.018)**

* The maximum likelihood estimate represents the log odds of one or more episodes of weight cycling? 20 lbs (9.1 kg) per unit or level increase in the study variable. To convert to the odds ratio (OR) take the inverse ln (ex) of the estimate. TREI = Thinness and Restricting Expectancy Inventory; DE = Dieting Expectancy score. $p < 0.05$.