

Relationship Between Motivation for Weight Loss and Dieting and Binge Eating in a Representative Population Survey

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ABSTRACT

Objective: To investigate the relationship between reasons for weight loss and previous dieting attempts and current binge-eating episodes in overweight and obese individuals.

Method: For the $n = 355$ interviewees of a representative sample of Swiss inhabitants ($n = 1,000$) reporting a body mass index (BMI) of ≥ 25 , the Weight Loss Motivation Questionnaire—distinguishing between the three scales health, appearance in relation to oneself, and appearance in relation to others—was assessed. Pearson's and Spearman's rank correlation coefficients and the partial correlation coefficient controlling for age, sex, socioeconomic status, and BMI were calculated.

Results: Number of previous diets was significantly correlated with all three subscales, whereas presence of binge-eating episodes was only significantly correlated with appearance in relation to oneself.

Discussion: Dieting and binge-eating behavior are differently associated with reasons for weight loss; better matching of treatments to patients' individual needs might improve the high dropout rates observed in weight loss treatments and enhance weight loss success. © 2010 by Wiley Periodicals, Inc.

Keywords: obesity; weight loss; health; appearance; binge eating; dieting

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Introduction

Obesity represents one of the major health problems worldwide (see, e.g., World Health Organization¹) and is closely associated with various chronic physical disorders, mental disorders, and social impairment.^{2–5} The majority of obese individuals are constantly trying to lose weight by conducting diets, that is, by consuming fewer calories or less fat, and less frequently, by exercising more.^{6,7}

A substantial subgroup of obese individuals additionally suffers from repeated binge-eating episodes with prevalence rates ranging from 0.7–3.3% in community-based studies^{8,9} to 29.7% in weight loss samples.¹⁰ A binge-eating episode is defined as the experience of loss of control over eating, thus eating a larger amount of food than others in the

same time period until feeling uncomfortably full.¹¹ Individuals experiencing regular binge-eating episodes are characterized as a subpopulation of obese patients with more severe eating disorder pathology and general psychopathology.^{12,13} They also show earlier start of overweight, higher weight, more frequent weight fluctuations, and more dissatisfaction with their weight and appearance than their obese nonbinging counterparts.^{13–15}

Empirical evidence regarding the prognostic significance of dieting and binge-eating behavior for treatment adherence is mixed. A higher number of previous dieting attempts was associated with non-completion in some studies,^{16,17} but with weight loss maintenance in another study.¹⁸ Regarding binge eating, some studies reported higher dropout rates from weight control programs, less weight loss, and more rapid weight regain for binge-eating participants,^{17,19,20} whereas others observed equal success of behavioral weight loss treatments in both obese binge-eating and nonbinging patients.²¹ Overall, dropout rates of up to 80% are an important problem in weight loss treatments, as they substantially diminish the long-term efficacy of available treatment options.^{14,22,23}

The practical guidelines of the National Heart, Lung, and Blood Institute²⁴ suggest that reasons for

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entering a weight loss treatment represent important characteristics of patients and should be assessed before treatment start, as they are likely to influence patients' attrition rates and treatment success. Data from weight loss intervention studies indicate that the perception of obesity as a health risk and dissatisfaction with one's own appearance represent the two main pretreatment reasons for weight loss in overweight and obese binge and nonbinge patients.²⁵⁻²⁸ Nevertheless, their impact on sustaining efforts for weight loss has not yet been investigated.

Because of a lack of valid instruments for assessing these reasons for weight loss, we developed the Weight Loss Motivation Questionnaire (WLM-Q) in a previous study (Schelling et al., submitted). The WLM-Q is a valid and reliable 24-item questionnaire assessing health and appearance as the two main reasons for weight loss on three subscales: health, appearance in relation to others, and appearance in relation to oneself. In this study, we investigated how motivation for weight loss as assessed by the three subscales of the WLM-Q is associated with the frequency of previous diets and the presence of regular binge-eating episodes, two commonly seen behaviors in the overweight and obese, which both seem to influence treatment outcomes.

Method

Participants

In January 2004, a professional research institute in Switzerland (GfK Switzerland) conducted a telephone survey of a representative sample of 1,000 residents from the German- and French-speaking regions of Switzerland. Participants were selected according to the random-quota method, with age, sex, geographical region, and size of community being the quota characteristics. Participants were selected from the database of current landline telephone accounts and had to be between 15 and 74 years of age. For our analysis, we used the 355 (36%) interviewees reporting a body mass index (BMI) of 25 or above.

Measures

Weight Loss Motivation Questionnaire. The WLM-Q is a reliable and internally consistent 24-item questionnaire assessing different aspects of motivation for weight loss on three scales with higher scale scores indicating higher motivation for weight loss (Schelling et al., submitted). The first scale, health, reflects the desire to live healthier and longer (e.g., "I want to lose weight to decrease my

health risks"). The second scale, appearance in relation to others, deals with items focusing on the expectation that interpersonal relationships will improve following weight loss (e.g., "I want to lose weight to have more friends"). The third scale, appearance in relation to oneself, refers to obese individuals' wishes to be more attractive and thus to lower feelings and cognitions of body dissatisfaction (e.g., "I want to lose weight to be able to dress more fashionably"). All items had to be answered on a four-point Likert scale with values of 1, absolutely not; 2, somewhat; 3, moderately; and 4, strongly indicating how much participants identified with the different statements. Multigroup analyses between sex (male vs. female), age (<50 vs. ≥50 years), and BMI (<30 vs. ≥30) subgroups revealed factorial invariance for factor loadings between all subgroups and factorial invariance for factor variances and covariances between age and BMI groups but not between males and females: Covariances were particularly high between the second and third scale for males ($r = .81$) and between the first and third scale for women ($r = .72$; Schelling et al., submitted).

Dieting and Binge-Eating Episodes. Number of previous diets was assessed by asking participants how many times they had gone on a diet in their life. Presence of binge-eating episodes (yes/no) was assessed according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR),¹¹ where binge eating is described as eating a larger amount of food than normal in a short time in association with the feeling of loss of control over eating.

Statistical Analysis

The relationship between the three scales of the WLM-Q (health, appearance in relation to others, and appearance in relation to oneself), binge-eating episodes, and number of previous diets was analyzed by computing Pearson's correlation coefficient, Spearman's rank correlation coefficient, and the partial correlation coefficient controlling for age, sex, socioeconomic status (SES), and BMI. The three scales of the WLM-Q were all log-transformed to better meet the normality assumption. Ten cases being univariate or multivariate outliers, 25 cases containing at least one missing answer, and 18 cases answering all questions with either 1 (absolutely not) or 4 (strongly) were omitted from the analysis. Thus, the sample size used for subsequent analyses was 302. All analyses were done using the software package SPSS 13.²⁹

Results

The 302 overweight and obese interviewees had a mean age of 47.1 years (SD = 14.5) and 65.2% were

male. SES was low in 32.4%, middle in 53.1%, and high in 14.5% of the participants and their average BMI was 28.2 (SD = 2.8), range 25.0–48.2. Altogether, 89 participants (30.1%) reported a mean number of 2.7 (SD = 1.9) previous diets, and 207 (69.9%) reported no previous dieting attempts. A total of 11% ($n = 32$) reported currently experiencing eating binges accompanied by a feeling of loss of control. Frequency of eating binges was below twice per week in 55% ($n = 17$), equal to twice per week in 30% ($n = 10$), and above twice per week in 12% ($n = 4$) of participants. Number of diets and number of binge-eating episodes were significantly correlated ($r = .17, p < .01$), although the correlation was only small to medium according to Cohen.³⁰ Mean values of the log-transformed scale scores of the WLM-Q were 0.78 (SD = 0.32) for health, 0.23 (SD = 0.30) for appearance in relation to others, and 0.57 (SD = .40) for appearance in relation to oneself (the theoretical minima and maxima for all three scales were 0 and 1.39, respectively).

The number of previous diets was significantly correlated with all three reasons for weight loss with highest values for appearance in relation to oneself and lowest values for appearance in relation to others. Binge-eating behavior was only significantly correlated with appearance in relation to oneself (Table 1). The similar values obtained for partial correlation coefficients relative to the other two coefficients show that, controlling for age, sex, SES, and BMI, these variables had very little impact on the relationships tested.

Discussion

In this study, we tested the relationship between personal reasons for weight loss as assessed by the scales of the WLM-Q (health, appearance in relation to others, and in relation to oneself), and dieting and binge-eating behavior in a representative sample of overweight and obese individuals in Switzerland. We thereby aimed at gathering knowledge about possible correlates of personal reasons for weight loss that may help to improve treatment strategies and to reduce the dropout rates of up to 80% that are an important problem in weight loss treatments.^{14,22,23}

Results show that a higher number of previous diets was associated with higher motivation for weight loss on all three subscales of the WLM-Q. Thus, previous dieting seems to be an indicator for

TABLE 1. Correlation between reasons for weight loss and dieting and binge-eating episodes

		Reason for Weight Loss		
		Health	Appearance in Relation to Others	Appearance in Relation to Oneself
Number of diets	r_p	.199**	.151*	.291**
	r_s	.159**	.130*	.235**
	pr	.154*	.143*	.272**
Binge-eating episodes (0 = no, 1 = yes)	r_p	.084	.112	.179**
	r_s	.073	.091	.175**
	pr	.099	.097	.157**

Notes: r_p , Pearson correlation coefficient. For binge-eating episodes this is equivalent to the point-biserial correlation coefficient; r_s , Spearman's rank correlation coefficient; pr , Partial correlation coefficient controlling for age, sex, SES, and BMI.

* $p < .05$.

** $p < .01$.

high motivation for weight loss but probably is not specific to any single factor, at least with respect to the three scales that we used in this study. Nevertheless, number of dieting attempts negatively predicted treatment outcome and adherence in other studies.^{16,17} It might thus be hypothesized that frequent dieting behavior is a sign of desperate efforts to lose weight that can easily be frustrated if weight loss expectations are not met in the short term.³¹ To reduce these dropouts, establishing realistic weight loss goals and continuous monitoring of weight loss motivation during treatment might be important.

Regarding binge-eating episodes, a positive association with the appearance in relation to oneself subscale was observed. This finding extends the research of Putterman and Linden,³² who observed that normal-weight individuals dieting for appearance reasons scored higher in disinhibition and body dissatisfaction than those dieting for health reasons. Moreover, research comparing obese individuals with and without binge-eating disorder revealed more dissatisfaction with weight and appearance for binge-eating patients compared to their obese nonbinging counterparts.^{13–15} It thus seems that individuals suffering from binge-eating episodes are most motivated to lose weight by their body dissatisfaction. However, overweight and obese individuals generally only achieve and maintain weight loss of about 5–10%,²⁴ which does not greatly affect appearance. Thus, dropping out of treatment due to unrealizable expectations might become more likely.

Several limitations have to be considered when interpreting our results. First, weight and height were assessed by interview only, so that there might

be underreporting of overweight in our sample.³³ Second, we did not assess binge eating based on the gold standard clinical interview Eating Disorder Examination³⁴; thus, overestimation of binge episodes cannot be excluded. Nevertheless, the prevalence rate of in our study was comparable to that found in the telephone survey of Kinzl et al.³⁵ (11 and 12.2%, respectively), whereas other studies using face-to-face interview techniques revealed lower prevalence rates of 0.9–8% in the general population (for an overview, see Munsch et al.⁸).

Clinical Implications

Our findings showed that number of previous dieting attempts and presence of binge eating episodes were associated with different reasons for weight loss as assessed by the WLM-Q. One reason for high drop out rates in current weight loss programs might be the “one size fits all” clinical practice, in which obese individuals are treated uniformly, independent of their subgroup characteristics and their reasons for weight loss. It thus might not only be a question of generating new treatment modalities for overweight and obese individuals to increase treatment success but also of tailoring existing treatment options to individuals’ specific needs and of enhancing motivation interventions. In doing so, adherence rates and ultimately weight loss success might be improved. Further research will have to confirm this suggestion using randomized controlled trials.

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