THESIS

ESTABLISHING THE RELIABILITY AND VALIDITY OF THE DIET CULTURE BELIEFS SCALE

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ABSTRACT

ESTABLISHING THE RELIABILITY AND VALIDITY OF THE DIET CULTURE BELIEFS SCALE

Throughout history, human bodies have evolved to represent status, wealth, and morality through their shape and size. Although body objectification occurs across the gender spectrum, women have historically experienced the most pressure to fit whatever sociocultural norms are current. In recent decades, women whose bodies are thin and toned are often more highly valued in United States society than those who are in larger bodies. Efforts to transform and maintain the ideal body are rampant among women and include restrictive diets, excessive exercise, and pharmaceutical or surgical interventions. Dieting has become a pervasive part of United States culture. Research has shown that dieting is a strong predictor of eating disorders. Eating disorders account for more deaths than most mental illnesses, second only to opioid addiction. Eating disorders and disordered eating exist in people of all shapes and sizes, ethnic, and sociocultural backgrounds, but they often go undiagnosed because of the sociocultural stigma that only emaciated, young, wealthy, White women suffer from them. Early detection of eating disorders is crucial for successful treatment and intervention. This study explored the development of a new scale, the Diet Culture Beliefs Scale, by assessing its reliability and validity as a measure of individuals' internalized beliefs about the ways in which food and body size are indicative of morality and health. The goal of this study was to contribute a tool to both the body of research and clinical practice that may help medical and mental health providers identify warning signs of eating disorder development. Study results indicated that the Diet

Culture Beliefs Scale retained its originally identified three-factor structure as evidenced by a Confirmatory Factor Analysis. Additionally, the Diet Culture Beliefs Scale showed both test-retest and internal consistency reliability, suggesting that it consistently measures diet culture beliefs over time and across items. Finally, the Diet Culture Beliefs Scale showed criterion-related, convergent, and discriminant validity suggesting that it is an accurate measure of diet culture as a unique construct. As such, the Diet Culture Beliefs Scale should be considered a psychometrically sound tool to support researchers and clinicians better understand the relationship between diet culture and eating disorders, as well as to provide early detection of eating disorder risk factors.

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Introduction

Throughout history, humans have used physical aspects of bodies to communicate value, morality, and power (Alicke, Smith, & Klotz, 1986). Dating back to 5th century BCE, restriction of food has been viewed in some cultures as a symbol of moral superiority (Letts, 2013). Over the course of colonization, the Industrial Revolution, and urbanization of the United States (U.S.), the cultural ideal of the female body has evolved through many shapes and sizes (Martin, 2010). In recent decades, this ideal body has become one of thinness, and women who attain it are often assumed to have great self-control, submissive nature, and morality (Harrison, 2019). With increased access to media, images and messages promoting this ideal female body are widespread and rampant. The ability to achieve a body that is deemed acceptable by society is often associated with various forms of unhealthy physical and psychological behaviors, such as caloric restriction, excessive exercise, and preoccupation with food and weight (Peat, Peyerl, & Muehlenkamp, 2008). Pharmaceutical companies and entrepreneurs have capitalized on these behaviors and marketed innumerable nutrition plans, exercise regimens, and supplements to help individuals lose weight (Oliver, 2006).

Diet Culture

Dieting, the intentional act of manipulating exercise and eating for the goal of improving health by losing weight, has become increasingly prevalent in recent years (Harrison, 2019). As recently as 2016, 68% of Americans reported having recently engaged in dieting behaviors or dieting lifestyles (NPD Group, 2016). The pressure to diet to achieve a more culturally acceptable body is experienced across race, ethnicity, age, and socioeconomic status (SES). Men and boys are susceptible to diet and body image concerns; however, these concerns are particularly salient among women and girls across the lifespan (Lam et al., 2009). Abramovitz &

Birch (2000) discussed that girls as young as five years old developed beliefs about dieting and engaged in intentional weight loss behaviors. In another study of children in grades three through six, 50% of boys and girls reported wanting to weigh less, and 77% had been exposed to the concept of dieting by their parents (Schur, Sanders, & Steiner, 2000). College women identified a high prevalence of conversation around dieting, exercise, and weight loss among their peer groups (Faw et al., 2021; Bardone-Cone et al., 2016). Women reported experiencing pressure to lose weight even during the post-partum period, a time immediately following a woman's significant and necessary weight gain to ensure the survival of her baby (Incollingo Rodriguez, Dunkel Schetter, & Tomiyama, 2019). Large proportions of older women reported body dissatisfaction as a motivation to engage in intentional weight loss through dieting (Thompson & Bardone-Cone, 2019).

In the U.S alone, the weight loss industry was worth $72 billion in 2019 (Marketdata LLC, 2019). Due to the commercialization of dieting and weight-loss programs and the sociocultural pressure to strive for, achieve, and maintain a thin body, dieting and exercise have become embedded in U.S. culture. Diet culture is a construct developed by registered dietician and eating disorder professional, Christy Harrison, to describe the increasing association of meaning and valuation of food and bodies. Diet culture is defined as a set of beliefs which attribute higher morality, better health, and status to thin bodies, weight loss efforts, and certain ways of eating, while consequently demonizing others (Harrison, 2019). Because diet culture connects one's body shape, size, and appearance with their value, it often contributes to increased stigma and oppression against individuals in larger bodies and those identifying as ethnic or racial minorities, gender nonconforming, and with limited abilities (Puhl & Heuer, 2010).

The purpose of this study was to evaluate the Diet Culture Beliefs Scale (DCBS) (Davidson, 2019). Screening for eating disorders in clinical or healthcare settings may be improved by including measures of early dieting behaviors (Eddy & Kim, 2016; Liechty & Lee, 2013). Having a valid and reliable scale to measure diet culture beliefs will help clinicians better identify individuals who may be at risk of developing psychologically and physiologically harmful eating disorders and behaviors. Because dieting behaviors are associated with disordered eating patterns and eating disorders, early intervention and psychoeducation regarding beliefs about dieting should be developed and researched (Rowe, 2017). The DCBS is one tool that may be useful for clinicians to identify clients who may be at risk of developing dieting or disordered eating behaviors. Understanding one's level of beliefs in diet culture could help clinicians develop treatment goals targeting cognitions and beliefs in order to help prevent behavioral and psychological distress related to food and body (Cooper et al., 2007).

Research regarding intentional weight loss behaviors is lacking in populations representing a diversity of individuals, even though these individuals are often at higher risk of sociocultural stigma regarding their bodies (da Luz et al., 2018; Rodgers et al., 2017). Psychological research has historically lacked diversity in most domains, which likely influences our understanding of behavior across cultures and identities (Hall, 2006). According to Sonneville and Lipson, the stereotype that eating disorders only affect wealthy, white, thin women and girls often prevents those holding diverse ethnic, racial, socioeconomic, and size identities from being identified as engaging in disordered eating behaviors and from seeking treatment (2018). Additionally, research on eating disorders and eating disorder prevention trials primarily include predominately white, female participants (Rodgers et al., 2019). Because of the impact of diet culture and disordered eating across identities, it is important to develop screening

measures that are inclusive and are able to capture disordered behaviors for a wider range of the population. Next, I will explain the history of and outcomes associated with dieting.

Background and History

Diets and Medicine. Weight as an indication of health has a long and tumultuous history. A primary measure used in the U.S. to classify individuals by weight is Body Mass Index (BMI; Gorber et al., 2007). BMI was initially created by an astronomer without medical training as a statistical tool used in White European populations (Bhanoo, 2009). Although BMI was never intended for clinical use it was adopted by the insurance and medical industry and eventually became the standard by which medical professionals judge individuals' health status (Tomiyama et al., 2016). The BMI has been found to be a poor measure of health, lacking both specificity and sensitivity in representing body fat and muscle mass as well as differences across genders (Rothman, 2008). During the "obesity epidemic" of the 1990s, conflicts of interest between members of the National Institute of Health (NIH) and pharmaceutical companies called into question the integrity of BMI cutoffs deemed "healthy" (Moynihan, 2006). Many members of the NIH were connected with various pharmaceutical companies (Harrison, 2019). Because pharmaceutical companies had vested interest in dieting through supplements, appetite suppressants, and weight loss pills, NIH panelists tasked with addressing potential health problems associated with higher weights may have been biased in reaching their conclusions (Oliver, 2005). Additionally, research has shown that it is safer for an individual to maintain a higher but stable weight than to fluctuate from unhealthy weight-loss behaviors followed by post-diet weight gain (Garner & Wooley, 1991).

BMI and weight stigma are strongly tied to racial discrimination and socioeconomic status (Puhl & Heuer, 2010). The number of adults in the U.S. who have a BMI considered

"overweight" or "obese" is disproportionately larger among Black Americans, particularly among Black women (Miller et al., 2022). Gee et al. (2011) reported that higher BMI was correlated with experiences of both weight and racial discrimination among Asian Americans. Additionally, many studies have indicated that racial discrimination is a risk factor for higher BMI among minoritized populations and that size discrimination and socioeconomic status may adversely impact their medical care and access to resources to support healthy living (Vásquez et al., 2019).

Diets Disguised as Lifestyles. Diet programs gained increasing popularity during the later 20th century (Spadine & Patterson, 2022). Weight Watchers, Atkins, Jenny Craig, and South Beach were among the frontrunners of weight loss prescriptions (Harrison, 2019). In the decades that have followed, diet culture has shifted from these explicit plans to more subtle modalities, often called "lifestyles" (Hanson, 2021). While thinness is still idealized, so are very specific forms of "healthy living" (Walsh & Baker, 2020). Methods such as gluten elimination, diets such as the Whole30, the paleo diet, and veganism are widely practiced forms of restriction in the U.S. (Lee & Worthy, 2021; McGirr, McEvoy, & Woodside, 2017). The motivation for these lifestyle choices can be difficult to dissect, as many individuals have reasons other than weight loss and perceived status for engaging in them (Salehi, Díaz, & Redondo, 2020).

For instance, individuals with medically diagnosed Celiac disease or who have an allergy to wheat are encouraged to eliminate gluten from their diet to reduce inflammation and allergic reactions (Leonard, Cureton, & Fasano, 2017). However, the recently popularized diagnosis of "gluten sensitivity" has very little empirical support. One study suggests that individuals who believe they are sensitive to gluten may be experiencing symptoms that could arise from anxiety about gluten, rather than the content of the gluten itself (Levinovitz, 2015). In another example,

many individuals choose to live a vegetarian or vegan lifestyle because it fits with their values regarding animal rights and environmental practices (McGirr, McEvoy, & Woodside, 2017). However, many individuals with eating disorders use "semi-vegetarian" diets, or partially restricting meat intake, to cover up their psychological fears of food and weight (Timko, Hormes, & Chubski, 2012). While claiming to be lifestyle choices rather than diets, these programs often require individuals to restrict food groups as well as attach labels to food that are associated with cleanliness, purity, and morality (Cinquegrani & Brown, 2018). It is often unclear whether individuals engage in particular diets or lifestyles as a result of their values and physiological health concerns, as a result of diet culture, or both. Because people who engage in diets and certain eating-related lifestyles are at higher risk of eating disorders or disordered eating, it is important to better understand the role of diet culture as a motivating factor (Ambwani et al., 2019).

Outcomes Associated with Dieting. Much to the dismay of individuals engaging with dieting and weight loss behaviors, dieting and disordered weight loss behaviors are counterproductive and are often correlated with higher post-diet weight, higher risk of sedentary behavior, and increased episodes of binge-eating (Goldschmidt et al., 2018; Low et al., 2001; Massey & Hill, 2012). Restricting both amount and type of food can interfere with one's ability to eat intuitively by manipulating the body's natural cues for hunger, fullness, cravings, and satiety (Moy et al., 2013). Dieting is often motivated by individuals' preoccupation with their body shape, weight, and size, which is a predictor of disordered eating and eating disorders (Sharpe et al., 2018; Rosendahl et al., 2009; Eddy & Kim, 2016). While individuals of all gender identities may be impacted by preoccupation with weight and thinness, eating disorders are outcomes that are more common among women (Rosendahl et al., 2009; Sharpe et al., 2018).

Individuals of all ages and life stages engage in dieting, but adolescent girls who diet are at a particularly high risk of developing eating disorders later in life (Loth et al., 2014). Vast research in the field of eating disorders has found that individuals who suffer from these conditions are likely to experience a wide variety of very serious physical symptoms, which can result in lifelong health problems or even death (Gaudiani, 2018; Donaldson & Gordon, 2015; Rome & Ammerman, 2003).

In addition to the development of eating disorders, restrictive dieting can lead to psychological distress resulting from the body's increased cortisol release in response to the stress dieting imparts to the body (Tomiyama et al., 2010). Faw et al. (2021) explored the ways in which women relate to one another through body corumination and found that the specific ways in which women engage in dialogue related to body dissatisfaction and dieting can lead to increased distress related to body image and disordered eating behaviors. Finally, restrictive dieting often correlates with social outcomes, including decreased performance in school and work settings and increased drug and alcohol use (Green et al., 1994; Krahn et al., 1992).

Diet Culture Belief Scale

In 2019, the (DCBS; see Appendix A) was developed to offer an empirical measure of the extent to which individuals believe the messages of diet culture (Davidson, 2019). The DCBS is a nine-item, three-factor scale measuring constructs of dieting and status, moralization of food and bodies, and dieting and health. Respondents are asked to respond to each item using a 1-6 scale indicating their level of agreement with each. The lower end of the scale indicates "I never…" and the upper end of the scale indicates "I always…" An exact center indicating a neutral response is not present, as researchers have found that this option can be tempting for respondents who would rather not take even a slight stance in either direction (Garland, 1991).

A longitudinal study conducted by Liechty and Lee (2013) indicated that eating disorder screenings, especially among females, may have been more effective in detecting risk and preventing eating disorder development if they included measures of diet and weight loss behaviors. Additionally, many clinicians see the obsessive pursuit of weight loss and dieting to be a public health crisis (Cogan & Ernsberger, 1999). The opportunity to obtain data about diet culture beliefs may help inform practice for clinicians by raising awareness of the impact and prevalence of those beliefs. Finally, diet culture has been associated with negative social and psychological outcomes resulting from weight-stigma against individuals living in larger bodies (Puhl & Heuer, 2010). Both the American Psychological Association (APA) and the American Medical association (AMA) ethical codes indicate that mental health and medical professionals must be committed to bettering social justice and public health (APA, 2017; Brotherton, Kao, & Crigger, 2016) Therefore, it is important to provide a valid and reliable measure of the intensity of diet culture beliefs to help address size oppression from a social justice standpoint (Kasardo, 2019).

Current Study

The purpose of this study was to empirically examine the reliability and validity of the DCBS in order to contribute to the body of knowledge about diet culture beliefs across the population. I hypothesized that the items would load onto the previously identified factors of dieting and status, dieting and morality, and dieting and health (H1). Secondly, I hypothesized that the DCBS would demonstrate test-retest reliability when measured twice in the same sample over the course of three months (H2). I hypothesized that the DCBS would show internal consistency reliability by showing strong McDonald's omega values in each factor (H3).

To measure validity, theoretically appropriate scales were selected for criterion-related, convergent, and discriminant validity. When observing expected outcomes of diet culture beliefs, I hypothesized that the DCBS would show criterion-related validity, as evidenced by high scores on the DCBS correlating with high scores on Food Preoccupation Questionnaire (H4) and the Disordered Eating Attitudes Scale (H5). The Food Preoccupation Questionnaire is a well-established measure of the degree to which individuals are cognitively and emotionally preoccupied with food and distressed by their relationship with food (Tapper & Pothos, 2010). The Disordered Eating Attitudes Scale is a measure of both an individual's disordered behaviors around food and their beliefs about those behaviors (Alvarenga et al., 2010). Because of the nature of the DCBS, it made theoretical sense to compare one's beliefs about diet culture to their level of preoccupation with food and the ways in which their beliefs are reflected in their behaviors.

When measured in conjunction with scales of similar constructs, I hypothesized that the DCBS would show convergent validity, and that, as scores on the Food Life Questionnaire – Short Form increased, so would scores on the DCBS (H6). The Food Life Questionnaire – Short Form is a measure of one's concern about their weight, their beliefs about the relationship between dieting and health, and their perceptions regarding foods that are "natural" (Sharpe et al., 2013). This scale is similar to the DCBS but more broadly measures internalized beliefs and behaviors rather than cultural beliefs as a whole. Finally, I hypothesized that when measured against scales assessing different constructs, the DCBS would show discriminant validity with the Big-5 personality trait of extraversion (H7) and with the GQ-6 gratitude scale (H8), as there is no theoretical reason to believe that gratitude and extraversion would be related to one's beliefs about diet culture.

This study was conducted in three parts. Study 1 used data from the first set of participants to complete a Confirmatory Factor Analysis of the DCBS. Study 2 included data from participants at both time 1 and time 2 and examined the reliability measures of the DCBS. Finally, Study 3 used participants from both times 1 and 2 to explore the validity of the DCBS.

Study 1: Confirmatory Factor Analysis

The DCBS was originally developed through a rigorous psychometric process (Davidson, 2019). Focus groups were conducted to broadly develop ideas about how individuals experience diet culture and their beliefs about food, bodies, and health. Then, recordings from the focus groups were transcribed and coded to identify overarching themes from the focus groups. These themes as well as existing literature were used to construct potential scale items, and subject matter experts were consulted to determine the clarity of each item and its reflectiveness of diet culture beliefs as a construct. 27 items were eliminated, and the 37 remaining items were administered to participants. An exploratory factor analysis (EFA) was conducted with hypothesized factors of dieting and status (11 items), moralization of food and bodies (13 items), and dieting and health (12 items). Factor loadings were used to determine the final scale items, and the new scale was administered to a second sample of participants. A confirmatory factor analysis was conducted to solidify the factor structure and calculate reliability estimates for the factors. Because the current study was using a new sample, it was important to first confirm that the factor structure held before moving into reliability and validity studies (DeVellis, 2012). I hypothesized that the DCBS would remain a three-factor model, with items significantly mapping onto the factors dieting and status, dieting and health, and moralization of food and bodies (H1).

Method

Participants. Data for the confirmatory factor analysis (CFA) were collected via the Colorado State Undergraduate Research pool. Because this scale was intended to measure the impact of diet culture beliefs among women, only students identifying as women (e.g., cisgender women and transgender women) were eligible to participate. The survey was administered

through Qualtrics and included basic demographic information (see Appendix B), the DCBS, and additional scales that were used to analyze the validity of the DCBS. All participants were recruited with the approval of the Colorado State University IRB and provided informed consent prior to participation. Participants received compensation in the form of one hour of research credit. The sample was 84% White and 16% Hispanic/Latinx. The mean age of participants was 18.6 years with a standard deviation of 1.3 years. Complete demographic information can be found in Table 1.

Table 1

Demographics of the Studies

	Study 1 N=235		Studies 2 & 3 N=203	
	M(SD)	%	M(SD)	n(%)
Age	18.6(1.3)		18.7(1.1)	
Race				
American Indian or Alaska Native		1		<1
Asian, Indian, or Asian-American		3		3
Black or African American		3		2
Multiracial or Biracial		6		5
Native Hawaiian or Pacific Islander		<1		0
White		84		85
Other		1		2

Prefer not to Answer	<1	2
Ethnicity		
Hispanic or Latinx	16	16
Not Hispanic or Latinx	83	83
Prefer not to Answer	1	1

Measures.

Diet Culture Beliefs Scale (DCBS). The DCBS (see Appendix A) is a nine-item, three-factor scale measuring constructs of dieting and status, moralization of food and bodies, and dieting and health. Items include statements such as "Fat people are unhealthy" and "I only exercise to have a body that others find acceptable." Respondents are asked to respond to each item using a 1 to 6 scale indicating their level of agreement with each. The lower end of the scale indicates "I never…" and the upper end of the scale indicates "I always…" An exact center indicating a neutral response is not present, as researchers have found that this option can be tempting for respondents who would rather not take even a slight stance in either direction (Garland, 1991). In its initial development, the DCBS showed acceptable internal consistency, with overall Cronbach's $\alpha = 0.83$ (Davidson, 2019). Higher scores on the DCBS indicate stronger Diet Culture Beliefs.

Analyses. I conducted a CFA to confirm that the relationship pattern previously determined in the development of the DCBS held true. Data were cleaned in Microsoft Excel Version 16.59 (Microsoft Excel Corporation, 2022) and analyzed in MPlus Version 8.0 (Muthén & Muthén, 2017). Missing data were removed from the study. A total of 238 participants

responded to the survey. Three participants did not answer at least one question on the DCBS and were removed for final analyses, leaving 235 participants' responses in the final dataset.

As outlined by Kim and Mueller (1978), I began by constructing a covariance matrix to observe the intercorrelation between items, which are presented in Table 2. Covariances between items shows positive correlations. The correlations between items indicate moderate to strong correlations ($0.50 \leq r \leq 0.70$), between items in factor one moderate to strong correlations between items in factor two ($0.53 \leq r \leq 0.75$), and weak to moderate correlations ($0.28 \leq r \leq 0.39$) between items in factor three.

Table 2

Correlations and Covariances between DCBS Items

	Covariances								
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Item 1	1.85								
Item 2	1.29	1.83							
Item 3	1.01	0.92	1.88						
Item 4	0.96	0.80	0.91	0.18					
Item 5	0.84	0.68	0.70	0.13	1.63				
Item 6	0.74	0.74	0.65	0.12	1.07	2.49			
Item 7	0.11	0.10	0.20	0.39	0.29	0.37	1.29		
Item 8	0.38	0.37	0.37	0.45	0.43	0.45	0.53	1.41	
Item 9	0.28	0.30	0.54	0.55	0.51	0.58	0.44	0.55	1.84

	Correlations								
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9

Item 1	1.00								
Item 2	0.70	1.00							
Item 3	0.54	0.50	1.00						
Item 4	0.53	0.44	0.49	1.00					
Item 5	0.48	0.39	0.40	0.75	1.00				
Item 6	0.35	0.35	0.30	0.53	0.53	1.00			
Item 7	0.07	0.07	0.13	0.26	0.20	0.21	1.00		
Item 8	0.24	0.23	0.23	0.29	0.28	0.24	0.39	1.00	
Item 9	0.15	0.16	0.29	0.30	0.29	0.27	0.28	0.34	1.00

As suggested by Hu and Bentler (1999), I used model fit criteria of Comparative Fit Index (CFI) > 0.95, Tucker Lewis Index (TLI) > 0.95, Root Mean Square Error Approximation (RMSEA) < 0.06, Standardized Root Mean Square Residual (SRMR) < 0.08, and non-significant ($p < 0.05$) Chi Square (χ^2). The minimum cutoff for factor loadings was 0.30, as Rakov and Marcoulides (2011), suggest that factor loadings above 0.30 indicate good model fit.

Results

The CFA results were gathered from the sample collected in study 1. After missing data were removed from the original sample (n = 238), 235 participants' responses to DCBS items were used to conduct the CFA. Results indicated that the previously established three-factor structure of the DCBS had excellent model fit. Means, standard deviations, and factor loadings can be found in Table 3. Model fit indices were χ^2 = 34.677, df = 24, and p = 0.0733, CFI = 0.986, TLI = 0.978, RMSEA = 0.044 with a 90% confidence interval [0.000, 0.073], and SRMR = 0.042. All items loaded onto factors significantly, with p-values less than 0.001. The correlations between dieting and status and moralization of food and bodies ($r = 0.674, p < 0.001$), between dieting and status and dieting and health ($r = 0.358, p < 0.001$), and between

moralization of food and bodies and dieting and health ($r = 0.546, p < 0.001$) were all significant. The dieting and status subscale yielded an omega value of 0.814, the moralization of food and bodies subscale yielded an omega value of 0.830, and the dieting and health subscale yielded an omega value of 0.609.

Table 3

Means, SDs, Factor Loadings, and Omegas

	Test (n = 235)			Retest (n = 203)		
	M(SD)	*Factor Loading*	*Omega*	*M(SD)*	*Factor Loading*	*Omega*
Dieting and Status			0.81			0.85
Q.1	3.66(1.85)	0.87		3.51(.97)	0.88	
Q.2	3.05(1.83)	0.79		2.94(.54)	0.78	
Q.3	3.45(1.88)	0.64		3.43(2.34)	0.77	
Moralization of Food and Bodies			0.83			0.85
Q.4	3.36(1.80)	0.89		3.23(1.93)	0.87	
Q.5	3.02(1.63)	0.84		2.98(1.78)	0.87	
Q.6	2.78(2.49)	0.62		2.57(2.62)	0.68	
Dieting and Health			0.61			0.68
Q.7	2.69(1.29)	0.55		2.74(1.42)	0.67	
Q.8						

Q.9	2.53(1.41)	0.66	2.74(1.64)	0.63
	3.69(1.84)	0.54	3.73(1.91)	0.64

Discussion

The purpose of Study 1 was to determine whether the previously established 3-factor model of the DCBS could be confirmed. Considering the results of the initial Exploratory Factor Analysis (EFA) conducted by Davidson (2019) and the current CFA, the items composing the DCBS loaded significantly onto proposed subscales of dieting and status, moralization of food and bodies, and dieting and health as expected. This suggests that the DCBS assesses three dimensions of diet culture and that the items accurately measure each of these domains. Each of these domains is important in that they represent unique aspects of diet culture which may impact or motivate individuals in different ways. The confirmation of the factor structure of the DCBS is important in verifying that it maintains its originally-hypothesized factor structure across samples, providing evidence that the observed three-factor structure of the DCBS reflects the theorized factor structure.

It is important to acknowledge the limitations of this CFA. This study's sample was taken from a population of undergraduate college women at a predominantly white institution and, therefore, was not a representative sample of the overall population of the United States. It will be important to consider this underrepresentation when applying the DCBS to diverse populations in clinical and research settings. Future research should continue exploring the factor structure of the DCBS across different populations and more diverse samples. Additionally, because the initial items of the DCBS were created specifically for a population of women, it is unclear whether the structure will hold for non-binary individuals and men. Diet culture and

disordered eating issues, while more prevalent among women, are not unique to women. Therefore, future research should explore diet culture as a construct among non-women populations. Finally, future research should examine how each of the three dimensions in the DCBS relates to different behaviors and outcomes.

Study 2: Reliability Studies of the DCBS

I hypothesized that the DCBS would show acceptable test-retest reliability among one sample of college students over a six-to-eight-week time lapse between tests (H2). I also hypothesized that the DCBS would show internal consistency, producing acceptable values of McDonald's omega for each factor (H3).

Method

Participants and Measures. Data for the test-retest and internal consistency reliability studies were collected via the Colorado State Undergraduate Research pool. Because this scale was intended to measure the impact of diet culture beliefs among women, only students identifying as women (e.g., cisgender women and transgender women) were eligible to participate. Two surveys were administered in Qualtrics at separate timepoints, six to eight weeks apart. Both surveys included basic demographic information (see Appendix B), the DCBS, and additional scales that were used to analyze the validity of the scale in question. All participants were recruited with the approval of the Colorado State University IRB approval and provided informed consent prior to participation. Participants received compensation in the form of one hour of research credit. 203 participants completed surveys at both time points. 85% of participants were White, 16% were Hispanic/Latinx, and the average age of participants at the second time was 18.7 with a standard deviation of 1.1. Complete demographic information can be found in Table 1.

Analyses. Data were cleaned in Microsoft Excel Version 16.59 (Microsoft Excel Corporation, 2022) by removing participants who did not complete both surveys. MPlus Version 8.0 (Muthén & Muthén, 2017) was used to calculate test-retest correlations between each factor. To do so, item sums were calculated for each of the factors and Pearson correlation coefficients

were calculated between each factor at time 1 and time 2 test administrations. According to Alridge et al. (2017), correlations greater than 0.70 show acceptable reliability of a measure over time, which was the minimum cutoff used in this study.

In order to assess for internal consistency reliability, Microsoft Excel Version 16.59 (Microsoft Excel Corporation, 2022) was used to calculate McDonald's omega values for each factor of the DCBS. McDonald's omega has been found to be a less flawed way to measure internal consistency compared to Cronbach's alpha (Dunn, Baguley, & Brunsden, 2014). While omega values greater than 0.90 are considered necessary for making decisions that impact humans, values greater than 0.50 are considered adequate for research purposes, with values greater than 0.75 preferred (Watkins, 2017; Lance, Butts, & Michaels, 2006).

Finally, the 3-factor structure was re-evaluated to confirm model fit using χ^2, TLI, CFI, RMSEA, and SRMR indices described in Study 1.

Results

Table 3 shows the means, standard deviations, factor loadings, and omega calculations for DCBS items onto each factor at both timepoints. Correlations between both the dieting and status factor and moralization of food and body factor at time 1 and time 2 indicate acceptable test-retest reliability (dieting and status: $r = 0.779$, moralization of food and body: $r = 0.716$). The correlation between the dieting and health factor at time 1 and time 2 was just under the acceptable cut-off ($r = 0.684$).

Internal consistency was acceptable for both the dieting and status factor and moralization of food and bodies factor (dieting and status: ω = 0.814, moralization of food and body: ω = 0.830). The third factor, dieting and health, fell short of the acceptable cutoff (ω = 0.609).

Model fit indices indicated that the 3-factor structure of the DCBS remained a good model fit ($\chi^2 = 37.871$, $df = 24$, $p = 0.0357$, TLI = 0.974, CFI = 0.982, RMSEA = 0.053 [0.000, 0.073], and SRMR = 0.044).

Discussion

Overall, results suggest that the DCBS showed good reliability within the sample. These reliability assessments predominately support both the test-retest reliability of the DCBS and its internal consistency, which was particularly strong for the first two subscales. Both omega values and factor test-retest statistics were acceptable for the dieting and status, moralization of food and bodies subscales, and dieting and health subscale. Although the third factor, dieting and health, showed lower internal consistency relative to the other two factors, it was still within the acceptable range of reliability.

It is important to address the differences between the reliability of the first two factors compared to the third. Internal consistency reliability may have been lower in the third factor due to the different ways in which the items were worded. Items seven and nine are phrased in third person language ("Fat people are unhealthy" and "A person's health is largely determined by the types of food they eat"). Item eight is written in first person language ("If I am thin, I will live longer"). It is possible that participants were impacted by social desirability response bias. Social desirability responses occur when individuals respond in ways they believe others would perceive as positive (Grimm, 2010). Participants may have underreported their beliefs/judgments about others for this reason, and since items were not consistently about others or self, this may have impacted the internal consistency reliability.

Test-retest reliability was also lower in the third factor. College is a formative time for individuals, where many beliefs and worldviews are formed and developed (Sokol, 2009). It is

possible that this could have impacted the third factor in a couple of ways. Because eating behaviors are often linked to anxiety and stress, one explanation for change over time during college is that students, particularly first-year students, are experiencing transition in their lives (Engeln-Maddox, 2005). This could potentially lead to experiences of stress, which may in turn impact their beliefs about food and body. On the other hand, there is an evolving movement around body-positivity and Health at Every Size ® (Lazuka et al., 2020). Many individuals are exposed to different ways of thinking during college, and it is possible that increased exposure to knowledge about health and the lack of causal relationship between size, weight, and health may have decreased scores on the third factor at the time of the second survey.

Because the sample was taken from college students only, it is important to acknowledge the ways in which college experience impacts students' beliefs. For example, it is possible that university experiences of social influence, academic learning, and opportunities to be independent from family and culture of origin may contribute to inconsistency in participants' responses (Guimond, 1997). College is a formative time for many individuals, and it will be important for future studies to further investigate whether or not the DCBS shows reliability in other, more diverse samples. Additionally, with the increase of media platforms emphasizing anti-diet and body-positive approaches, it is possible that participants' beliefs changed over time as a result of their media consumption (Spadine & Patterson, 2022).

Study 3: Validity Studies of the DCBS

Based on theory and literature, I expected that responses on the DCBS would correlate with responses on the Food Preoccupation Questionnaire and Disordered Eating Attitudes Scale to show criterion-related validity (H4 and H5). I expected that individuals with strong beliefs about dieting and food as it relates to health, status, and morality would also indicate preoccupation with food and behaviors and attitudes that could be described as disordered. I also hypothesized that responses on the DCBS would converge with responses on the Food Life Questionnaire – Short Form (H6) and show discriminant validity with the personality trait of extraversion and gratitude (H7 and H8). Grimm & Widaman (2012) recommend correlations between 0.3 and 0.5 to claim validity across similar constructs.

Methods

Participants. Validity analyses were conducted using data collected from both the time 1 and time 2 samples described in Study 2. Full demographic information can be found in Table 1.

Measures. In addition to the DCBS, several measures were administered to participants to determine the criterion-related, convergent, and discriminant validity of the DCBS.

Food Preoccupation Questionnaire. The Food Preoccupation Questionnaire (FPQ; see Appendix C) is a 26-item, two-factor scale composed of four subscales. The FPQ measures the frequency of and degree to which cognitions about food and dieting impact individuals by exploring time spent thinking about food and its relationship to positive, neutral, and negative thoughts about food (Tapper & Pothos, 2010). Items include statements such as “I often struggle with thoughts about food” and “I worry I spend too much time thinking about food.” Responses are based on a five-point Likert-type agreement scale from “completely disagree” to “completely agree.” Higher scores on the FPQ indicate higher levels of preoccupation with food. In this

study, the frequency, positive, and negative subscales were used to examine criterion-related validity. The FPQ shows good internal consistency, with Chronbach's α for each of these subscales being 0.83, 0.83, and 0.85, respectively.

Disordered Eating Attitudes Scale. The Disordered Eating Attitudes Scale (DEAS; see Appendix D) is a 25-item scale which measures individuals' relationships with food and body, as well as restrictive or compensatory behaviors (Alvarenga et al., 2010). Sample items include questions such as "I feel guilty if I eat something that I thought I should not eat for some reason" and "I worry all the time about what to eat, how much to eat, how to prepare food, and whether I should eat or not." Responses are scored on a five-point Likert-type frequency scale from "Always" to Never." Higher scores on the DEAS indicate more significant levels of disordered attitudes about food and body. Chronbach's α for the DEAS is 0.76, indicating that it is a reliable measure.

Food Life Questionnaire – Short Form. The Food Life Questionnaire – Short Form (FLQ-SF; see Appendix E) assesses the strength of an individual's belief that dieting impacts health as well as assesses the individual's concern with weight (Sharpe et al., 2013). Items include statements such as "I am currently on a diet" and "I think natural, organic foods are better for you than commercially grown/processed foods." Responses are scored on a seven-point Likert-type agreement scale from "strongly disagree" to "strongly agree." Higher scores on the FLQ-SF indicate higher levels of weight concern, beliefs about the impact of diet on health, and beliefs about natural foods being better than processed foods. Overall, the FLQSF is a reliable measure (Cronbach's α = 0.75). The FLQ-SF subscales measuring weight concern ($\alpha = 0.86$), diet-health link ($\alpha = 0.85$), and natural ($\alpha = 0.78$), subscales should theoretically

converge with diet culture beliefs, therefore I used this measure to assess convergent validity of the DCBS.

Big-Five Factor Scale. The Big-Five Factor Scale (see Appendix F) is a 50-item self-report questionnaire assessing personality traits (Goldberg, 1992). The Big-Five Factor Scale tests five domains, each composed of ten items. The domains assessed include extraversion, openness, conscientiousness, emotional stability, and agreeableness. I used the extraversion subscale ($\alpha > 0.90$) of the Big-Five Factor Scale to assess for discriminant validity with the DCBS, as extraversion and diet culture beliefs should be theoretically distinct constructs. Items include statements such as "I am the life of the party" and "I don't talk a lot" (reverse-scored). Responses are scored on a six-point Likert-type agreement scale from "strongly disagree" to "strongly agree." Higher on the Big-Five Factor Scale indicate higher extraversion traits.

Gratitude Questionnaire-6 Item Form. The Gratitude Questionnaire – 6 Item Form (GQ-6; see Appendix G) is a self-report six-item scale designed to assess one's tendency to experience and acknowledge gratitude in their everyday life (McCullough, Emmons, & Tsang, 2010). Items include statements such as "I have so much in life to be thankful for" and "I am grateful to a wide variety of people." The GQ-6 is scored on a seven-point Likert-type agreement scale, with responses ranging from "strongly disagree" to "strongly agree." The GQ-6 shows good internal consistency ($\alpha = 0.84$). Since there is no theoretical evidence to suggest a relationship between gratitude and dieting beliefs, I used the GQ-6 to assess for discriminant validity with the DCBS.

Analyses

Analyses were conducted in R (R Core Team, 2020). Convergent validity was tested by calculating the Pearson correlation coefficients between the sums of the DCBS item and the weight concern, diet-health risk, and natural subscales of the FLQSF. Discriminant validity was

tested by calculating the Pearson correlation coefficients between the sums of the DCBS items and the Extraversion subscale of the Big-Five Factor Scale, as well as between the subs of the DCBS and the GQ-6. Criterion-related validity was assessed by examining correlations between the DCBS and FPQ as well as between the DCBS and the DEAS.

Results

Criterion-Related Validity. The correlation between the DCBS and FPQ was 0.347 ($p < 0.001$) and between the DCBS and DEAS was 0.723 ($p < 0.001$; see Table 4 for all correlations). These correlations confirm my hypotheses that high scores on the DCBS would correlate strongly with high scores on both the FPQ and DEAS (H4 & H5).

Table 4

Validity Correlation Matrix

	Correlations				
	FPQ	DEAS	FLQ-SF	Extraversion	Gratitude
DCBS	0.35*	0.72*	0.71*	0.27	-0.04

Significant values are indicated with a ""*

Convergent Validity. Results yielded a correlation of 0.700 ($p < 0.001$), confirming my hypothesis that high scores on the DCBS would strongly relate to high scores on the FLQSF (H6).

Discriminant Validity. Discriminant validity was established between the DCBS and the Big-Five measure of extraversion with a nonsignificant correlation of -0.049 ($p = 0.451$) and the GQ-6 with a nonsignificant correlation of -0.114 ($p = 0.08$). This confirmed my final hypotheses, H7 and H8.

Discussion

Assessments of validity confirmed hypothesized relationships between the DCBS and other scales. The DCBS correlated moderately with the FPQ and strongly with the DEAS, indicating good criterion-related validity. The strong correlation between the DCBS and the FLQSF confirm convergent validity, and the weak correlations between the DCBS and the Extraversion subscale of the Big-Five Factor Scale as well as between the DCBS and the GS-6 show discriminant validity among these distinct constructs. These validity results are important in developing new psychometric tools, as they indicate that the measure is assessing what it is intended to measure. Additionally, convergent and discriminant validity allow scale developers to confirm that their scale behaves in expected ways when compared to measures of similar constructs without replicating those measures, and that it is distinct from and unimpacted by unrelated constructs.

The range of correlations calculated to measure criterion related validity was large. The correlation between the DCBS and FPQ was 0.347, while the correlation between the DCBS and DEAS was 0.723. This indicates that there is a stronger relationship between the constructs measured in the DCBS and DEAS than between the FPQ and DCBS.

As mentioned previously, this study has several limitations. While the sample was somewhat representative of the population of Colorado State University, it was not representative of the U.S. The sample lacks diversity in both age and ethnic/racial identity, as well as gender identity. It will be important for future research to determine if the DCBS is valid across different populations. It will also be beneficial to assess whether this measure is valid among non-woman individuals, and to explore the differences between individuals across the gender spectrum.

Overall Discussion

The results of the CFA, Reliability, and Validity studies supported hypothesis that the DCBS encompasses 3 factors (dieting and status, moralization of food and bodies, and dieting and health). Factor loadings and model fit indices indicated excellent model fit between the nine items of the DCBS and their corresponding factors.

Results also support the overall reliability of the DCBS. First, test-retest reliability was supported by both a strong correlation between data collected at two separate times and by the results of a retest CFA, which again yielded excellent model fit and appropriate factor loadings. Second, internal consistency was seen in two of the three factors of the DCBS.

Finally, results supported the criterion-related, convergent, and discriminant validity when compared with other measures. The significant and moderate-strong correlations between the DCBS and both the DEAS and FPQ supported the hypothesis that the DCBS correlates with more established measures of similar constructs. Additionally, the correlation between the DCBS and the FLQSF subscales of weight-concern, diet-health risk, and natural content was significant and strong, supporting the hypothesis that the DCBS would show convergent validity. Finally, the hypotheses that discriminant validity would be established by examining correlations between the DCBS and theoretically unrelated measures of extraversion and gratitude were supported in the weak and nonsignificant correlations between the DCBS and both the Big-Five extraversion subscale and the GSQ-6.

These results are promising when considering the ways in which the DCBS may contribute to both research and practice. While there are several existing measures of eating attitudes and behaviors, body image concern, and health perceptions, the DCBS is the first measure designed specifically to assess beliefs about diet culture as a unique construct. With the

evolution of the diet and wellness industries, and the ever-increasing accessibility to media and information, diet culture is pervasive and impacts a significant number of Americans (Mahlfeldt, 2021). Existing research suggests that the impact of dieting negatively impacts wellbeing, including financial, psychological, physical, social, and emotional domains (Faw et al., 2021; Goldschmidt et al., 2018; Low et al., 2001; Tomiyama et al., 2010; Massey & Hill, 2012; Green et al., 1994; Krahn et al., 1992). Eating disorder measures and interventions are prolific, yet extremely expensive, difficult to access, and often only reach a very small proportion of individuals suffering from disordered eating and distress related to food and body (ANAD, 2021). It is important to begin developing a set of established tools to help clinicians and researchers identify risk of eating disorders so they can intervene before behaviors become diagnosable.

Additionally, the DCBS may offer insight into the ways in which diet culture impacts minoritized populations who are often overlooked in eating disorder research and practice (Bardone-Cone, Neyland, & Lin, 2017). Weight stigma, less access to providers, and the lack of representation in the DSM and research are some of the factors that make identification of eating disorders more challenging among communities of color (Root, 1990). Being able to recognize the role that diet culture plays in various types of discrimination and stigma among non-White, disabled, and gender-diverse individuals will contribute to a more relevant body of research and support the social justice efforts to which psychology and medicine commit.

Finally, the DCBS can help researchers understand with more clarity the ways in which diet culture interacts with individuals' perceptions of health. Diet culture has drastically changed in recent years, and it can be more challenging to recognize harmful dieting and disordered eating behaviors, as they are most often perceived as health or wellness behaviors, regardless of

the psychological, social, and physiological harm they may cause (Colbert & Kalarchian, 2019). By gaining insight into this domain, psychoeducational tools can be developed to share with educators, coaches, medical and mental health providers, and nutritionists to help them understand the dangers of promoting diet culture and dieting behaviors in their practices.

Limitations

A primary limitation of this study was the sampling method. Relying on a university research pool often limits the generalizability of research. While the CSU research pool is somewhat representative of demographics in the Fort Collins, CO and Colorado regions, these geographic locations are not representative of the population of the United States. Therefore, researchers should continue exploring the structure, reliability, and validity of the DCBS in populations across the United States, and eventually, in other countries.

An additional limitation of this study is that the original scale was developed with data only from participants who identified as women. While diet culture is more prevalent among women, men and nonbinary individuals certainly experience sociocultural impacts of the diet industry and mindset. Again, this limits the generalizability of the DCBS to populations comprised of people who identify as cis or transwomen only. Future research should explore the ways in which the DCBS might be relevant in gender-diverse populations.

Future Directions

It will be important to better understand the predictive abilities of the DCBS. The literature suggests that dieting is a strong predictor of disordered eating and eating disorder development. The DCBS was developed as a tool to help researchers and clinicians better understand the ways in which strong dieting beliefs impact individuals and their relationships to food and bodies. By researching whether the DCBS accurately predicts dieting and disordered

eating behaviors, the utility of the DCBS can be expanded to not only increase literature and awareness of the relationship between diet culture beliefs and eating behaviors, but also to become a valid screening tool to provide early detection of risk among clinical populations. This could allow clinicians to target believes through cognitive therapeutic practices before behavioral components develop or are exacerbated.

As mentioned in the limitations, future research should also focus on studying diet culture beliefs among diverse populations. Literature suggests that non-White individuals are disproportionately negatively impacted by weight stigma and the BMI (Puhl & Heuer, 2010). Gender-diverse and neurodiverse individuals develop eating disorders at higher rates than cisgender and neuro-typical individuals (ANAD, 2021). Yet, these populations are considerably underrepresented in research. Therefore, incorporating the DCBS as a tool that can provide insight into their experiences with diet culture will not only include more representation in the body of research, but will also provide opportunities to increase access to resources and preventative care for more diverse communities.

Implications for Therapy Practice

While there are several measures to assess disordered eating, exercise, and body image behaviors and beliefs, the DCBS assesses a unique construct which is believed to be a potential risk factor for disordered behaviors. The DCBS should be considered a preliminary evaluation tool for clinicians working with women who may be at risk of developing eating disorders. Early detection of disordered attitudes and behaviors is crucial to providing adequate and effective interventions and could support more positive treatment outcomes. Additionally, the DCBS could be used as a clinical tool to help clinicians better understand the levels at which clients believe diet culture messages. This could support therapeutic work in helping clients explore and

understand the ways in which sociocultural norms and expectations for women and women's bodies more broadly impact their lives.

Conclusion

Overall, the DCBS is a short measure that has shown to be a reliable and valid indicator of diet culture beliefs. Specifically, the DCBS showed internal consistency and test-retest reliability, suggesting that the measure consistently measures diet culture as a construct across items and over time. The DCBS showed criterion-related, convergent, and discriminant validity when compared to other established measures, indicating that it is an accurate measure of diet culture as a unique construct. Considering the literature supporting the relationship between dieting and disordered eating behaviors as well as the present study's support for its reliability and validity, the DCBS should be considered as a tool that clinicians can use to better detect risk factors for disordered eating and eating disorders among women.

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Appendix A

Diet Culture Beliefs Scale

Factor 1: Dieting and Status (Score = Item 1 + Item 2 + Item 3)

Factor 2: Moralization of Food and Bodies (Score = Item 4 + Item 5 + Item 6)

Factor 3: Dieting and Health (Score = Item 7 + Item 8 + Item 9)

Item 1. I try to control my weight so that others will have a positive opinion of me.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 2. I only exercise to have a body that others find acceptable.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 3. I will only wear clothes that make me look thin.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 4. Some foods are temptations to be resisted.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 5. I put a lot of effort into resisting bad foods.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 6. There are some foods that I should never eat.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 7. Fat people are unhealthy.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 8. If I am thin, I will live longer.

Never *rarely* *sometimes* *often* *very frequently* *always*

Item 9. A person's health is largely determined by the types of food they eat.

Never *rarely* *sometimes* *often* *very frequently* *always*

Appendix B

Demographic Information Survey

1. Do you currently identify as a woman?
   This includes cis-women and trans-women.

   - Yes
   - No

2. What is your current age?

   Write in: _____

3. What is your college major?

   Write in: _____

4. How do you define your race?

   - American Indian or Alaska Native
   - Asian
   - Black or African American
   - Native Hawaiian or Other Pacific Islander
   - White
   - Another _____
   - Do not wish to respond

5. How do you define your ethnicity?

   - Hispanic or Latinx
   - Not Hispanic or Latinx
   - Another _____
   - Do not wish to respond

Appendix C

Food Preoccupation Questionnaire

Please rate the extent to which you agree or disagree with the following statements by selecting the appropriate box. Some of the questions may look as if they are 'opposite' to one another. However, **please don't worry about being consistent in your responses.** It is often the case that we feel one way in some situations but a completely different way in other situations. As such, you should answer each question as if it were the only question and avoid looking back at your previous answers.

1. I spend a lot of time thinking about food

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

2. Planning meals can be quite stressful.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

3. I often find myself thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

4. I really enjoy myself thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

5. I can get quite stressed if I start to think about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

6. I often struggle with thoughts about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

7. I like thinking about my favorite food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

8. I often look forward to my next meal.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

9. I hate being distracted with thoughts about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

10. I worry I spend too much time thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

11. I love thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

12. Thinking about food can put me in a bad mood.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

13. Sometimes I think about food just for the fun of it.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

14. I don’t think about food all that much.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

15. Deciding what to eat can be quite stressful.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

16. I can get really excited thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

17. Thinking about food can put me in a good mood.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

18. I hate thinking about food.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

19. I enjoy deciding what to eat in a restaurant.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

20. Thinking about food can make me quite miserable.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

21. I enjoy planning what I'm going to eat.

completely disagree	*disagree a bit*	*neither agree nor disagree*	*agree a bit*	*completely agree*

Appendix D

Disordered Eating Attitudes Scale

1. Please select how healthy and necessary you consider consumption of each kind of food below:

   Sugar
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   French Fries
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Oil
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Breads
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Rice
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Beans
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Pasta
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

   Red Meat
   Eating this food *often* is healthy and necessary
   Eating this food *occasionally* is healthy and necessary
   Not eating this food is healthy and necessary

Whole Milk
Eating this food *often* is healthy and necessary
Eating this food *occasionally* is healthy and necessary
Not eating this food is healthy and necessary

Cheese
Eating this food *often* is healthy and necessary
Eating this food *occasionally* is healthy and necessary
Not eating this food is healthy and necessary

Vegetables
Eating this food *often* is healthy and necessary
Eating this food *occasionally* is healthy and necessary
Not eating this food is healthy and necessary

Fruits
Eating this food *often* is healthy and necessary
Eating this food *occasionally* is healthy and necessary
Not eating this food is healthy and necessary

White Meat
Eating this food *often* is healthy and necessary
Eating this food *occasionally* is healthy and necessary
Not eating this food is healthy and necessary

2. Do you feel pleasure when you eat?

   Yes *No*

3. Does eating ever feel unnatural to you?

   Yes *No*

4. Have you ever spent one or more days without eating or having only liquids because you believed you could lose weight?

   Yes *No*

5. Do you count the calories of everything you eat?

   Yes *No*

6. Do you enjoy the feeling of an empty stomach?

   Yes *No*

7. Do you “skip” meals to avoid putting on weight?

   Yes *No*

8. Does eating make you feel “dirty”?

   Yes *No*

9. Do you have good memories related to food?

   Yes *No*

10. Would you like to not need to eat?

    Yes *No*

11. Do you believe that it is normal to eat sometimes just because you are sad, upset, or bored?

    Yes *No*

12. When you eat more than usual, what is your behavior afterwards?

    Restart eating as usual
    Assume you have lost control and keep eating more
    Decide to go on a diet to compensate
    Use some kind of compensation, such as physical activity, vomiting, laxatives, and diuretics

13. I feel guilty when I eat something that I thought I should not eat for some reason.

    Always *Usually* *Often* *Sometimes* *Never*

14. I quit eating a kind of food if I find out it has more calories than I thought.

    Always *Usually* *Often* *Sometimes* *Never*

15. I worry all the time about what I am going to eat, how much to eat, how to prepare food, and whether I should eat or not.

    Always *Usually* *Often* *Sometimes* *Never*

16. I worry about how much a certain kind of food or meal will make me gain weight.

    Always *Usually* *Often* *Sometimes* *Never*

17. I am angry when I feel hungry.

Always *Usually* *Often* *Sometimes* *Never*

18. It is hard to choose what to eat, because I always think I should eat less or choose the option with fewer calories.

Always *Usually* *Often* *Sometimes* *Never*

19. When I desire a specific kind of food, I know I won't stop eating until I have finished with it.

Always *Usually* *Often* *Sometimes* *Never*

20. I would like to have my appetite and eating behavior under total control.

Always *Usually* *Often* *Sometimes* *Never*

21. I try eating less in front of others in order to overeat when I am alone.

Always *Usually* *Often* *Sometimes* *Never*

22. I am afraid to start eating and not be able to stop.

Always *Usually* *Often* *Sometimes* *Never*

23. I dream of a *pill* that would replace food.

Always *Usually* *Often* *Sometimes* *Never*

24. I get nervous and/or lose my self-control at parties and buffets, due to a great amount of foods available.

Always *Usually* *Often* *Sometimes* *Never*

25. My relationship with food messes up my life as a whole.

Always *Usually* *Often* *Sometimes* *Never*

Appendix E

Food Life Questionnaire – Short Form

Subscales: Weight Concern, Diet-Health Link, Natural

1. I am concerned about being overweight.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

2. I feel guilty when I overeat.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

3. My thighs are too fat.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

4. I consciously hold back at meal time, so as not to gain weight.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

5. I am currently on a diet.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

6. I control my caloric intake.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

7. Diet can have a big effect on good health.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor*	*somewhat agree*	*agree*	*strongly agree*

disagree

8. Diet can have a big effect on heart disease.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

9. Diet can have a big effect on obesity.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

10. Diet can have a big effect on cancer.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

11. I think natural, organic foods are better for you than commercially grown/processed foods.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

12. I think natural, organic foods taste better than commercially grown/processed foods.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

13. I would rather be friends with someone who eats lots of fruits and vegetables than someone who eats lots of meats.

strongly disagree	*disagree*	*somewhat disagree*	*neither agree nor disagree*	*somewhat agree*	*agree*	*strongly agree*

Appendix F

Big-5 Factor Scale

On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then fill in the bubble that corresponds to the number on the scale.

1 = Strongly disagree

2 = Disagree

3 = Slightly disagree

4 = Slightly agree

5 = Agree

6 = Strongly Agree

1. Am the life of the party.
2. Am interested in people.
3. Am always prepared.
4. Am the life of the party.
5. Have a rich vocabulary.
6. Feel comfortable around people.
7. Sympathize with others' feelings.
8. Pay attention to details.
9. Seldom feel blue.
10. Have a vivid imagination.
11. Have a soft heart.
12. Take time out for others.
13. Get chores done right away.
14. Like order.
15. Start conversations.
16. Talk to a lot of different people at parties.
17. Get stressed out easily.
18. Worry about things.
19. Have excellent ideas.
20. Am quick to understand things.
21. Don't mind being the center of attention.
22. Don't talk a lot.

23. Feel others' emotions
24. Make people feel at ease.
25. Follow a schedule.
26. Shirk my duties.
27. Do not have a good imagination.
28. Get irritated easily.
29. Am exacting in my work.
30. Am easily disturbed.
31. Get upset easily.
32. Use difficult words.
33. Spend time reflecting on things.
34. Keep in the background.
35. Am not really interested in others.
36. Leave my belongings around.
37. Change my mood a lot.
38. Often forget to put things back in their proper place.
39. Have little to say.
40. Insult people.
41. Make a mess of things.
42. Am full of ideas.
43. Am not interested in other people's problems.
44. Don't like to draw attention to myself.
45. Often feel blue.
46. Have frequent mood swings.
47. Am not interested in abstract ideas.
48. Have difficulty understanding abstract ideas.
49. Feel little concern for others.
50. Am quiet around strangers.

Appendix G

The Gratitude Questionnaire – Six Item Form (GQ-6)

The Gratitude Questionnaire-Six-Item Form (GQ-6) is a six-item self-report questionnaire designed to assess individual differences in the proneness to experience gratitude in daily life. McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. Journal of Personality and Social Psychology, 82, 112-127. Instructions: Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neutral

5 = slightly agree

6 = agree

7 = strongly agree

____1. I have so much in life to be thankful for.

____2. If I had to list everything that I felt grateful for, it would be a very long list.

____3. When I look at the world, I don't see much to be grateful for.

____4. I am grateful to a wide variety of people.

____5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.

____6. Long amounts of time can go by before I feel grateful to something or someone.

Scoring: Compute a mean across the item ratings; items 3 and 6 are reverse-scored.