

Binge Eating Disorder: Recognition and Guided Self-Help Treatment
in an Underserved Population

By

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Chapter

Chapter I. Introduction

This dissertation examines binge eating disorder (BED) in an underserved community. Data from ethnically and socioeconomically diverse women were collected to answer questions about BED recognition as a barrier to care, attitudes toward binge eating treatment options, and feasibility of self-help binge eating treatment in a sample of black American, lower socioeconomic status (SES) women. Data collection occurred in two phases. In the first study, Recognition of Binge Eating Disorder, equal numbers of black and white American women completed a computerized experiment yielding information about how BED recognition relates to the ethnicity and SES of community observers and of those with the disorder. They also reported eating disorder symptoms and other health and demographic characteristics. The second study, Feasibility of Self-Help Treatment for Binge Eating, recruited black American women who binge eat with a focus on including those of lower SES. In addition to completing the BED recognition experiment, half of participants in the second study were randomized to guided self-help (GSH) cognitive behavioral therapy (CBT) based on the widely studied treatment manual, *Overcoming Binge Eating* (Fairburn, 2013) and encouraged to use the Recovery Record mobile application ("Recovery Record," 2014) for self-monitoring of eating disorder behaviors. Additionally, participants in the second study rated the acceptability of evidence-based binge eating treatments and modes of delivery. This paper provides background information regarding barriers to care for BED, then examines these newly collected data regarding BED recognition, treatment preferences, and treatment feasibility in an underserved population.

Chapter II. Background

Eating disorders are psychiatric conditions that result in excess mortality and morbidity for millions of people worldwide, though most never receive treatment (Arcelus, Mitchell, Wales, & Nielsen, 2011; S. J. Crow et al., 2009; Kessler et al., 2013). In the United States (US), approximately 13 million women and men have binge eating disorder (BED), bulimia nervosa (BN), or anorexia nervosa (AN) during their lifetimes, with many others affected by atypical, subclinical, or less well understood presentations, some of which are described in the diagnostic category of Other Specified Feeding or Eating Disorders (American Psychiatric Association, 2013; Hudson, Hiripi, Pope, & Kessler, 2007; United States Census Bureau, 2010). BED is the most common eating disorder, with 12-month US prevalence of 1.2%, followed by BN at 0.3%. Low AN base rates make its 12-month prevalence difficult to measure, but lifetime AN prevalence is 0.6%, relative to 2.6% for BED and 1% for BN (Hudson et al., 2007). Eating disorders affect more women than men, though sex differences are less pronounced in BED than in AN or BN (Hudson et al., 2007).

Most individuals with eating disorders engage in binge eating, which is the experience of losing control over the consumption of unambiguously large amounts of food in a discrete period of time (American Psychiatric Association, 2013). In full-syndrome BED, binge eating causes marked distress and often occurs rapidly, to the point of physical discomfort, in the absence of hunger, and accompanied by negative emotions and cognitions (American Psychiatric Association, 2013).

In the US, up to 70% of individuals with active BED do not receive eating disorder treatment (Hudson et al., 2010; Marques et al., 2011). Despite low eating disorder treatment rates, individuals with BED tend to be frequent consumers of services for other mental health

concerns and physical problems (Mond, Hay, Rodgers, & Owen, 2007; Mond, Myers, Crosby, Hay, & Mitchell, 2010; Striegel-Moore et al., 2008; Striegel-Moore et al., 2004), pointing to costly inefficiencies in health care utilization. Comorbidity is common for all major forms of anxiety, mood, impulse control, and substance use disorders, meaning that individuals with a primary diagnosis of BED usually present with multiple symptoms of psychopathology ([Hudson et al., 2007](#)).

Disproportionate sectors of the ethnic minority and lower socioeconomic (SES) population experience the 70% deficit in care for BED (Franko et al., 2012; Marques et al., 2011; Thompson-Brenner et al., 2013), despite the fact that BED occurs at comparable rates across US ethnic groups (Marques et al., 2011). In addition to psychosocial morbidity, BED frequently is comorbid with prevalent and costly public health problems, including obesity (Hudson et al., 2007; Kessler et al., 2013; Pike, Dohm, Striegel-Moore, Wilfley, & Fairburn, 2001; Striegel-Moore et al., 2005), metabolic syndrome (Barnes et al., 2011; Blomquist et al., 2012; Guerdjikova, SL, Kotwal, & Keck, 2007; Hudson et al., 2010; Roehrig, Masheb, White, & Grilo, 2009), and type two diabetes mellitus (T2DM) (Allison et al., 2007; S. Crow, Kendall, Praus, & Thuras, 2001; Gorin, 2008; Herpertz et al., 2000; Kenardy et al., 2001; Mannucci et al., 2002; Meneghini, Spadola, & Florez, 2006; Webb, Applegate, & Grant, 2011), conditions for which US ethnic minorities already are at increased risk (Centers for Disease Control and Prevention, 2011; Flegal, Carroll, Ogden, & Curtin, 2010; Ford, Giles, & Dietz, 2002).

Ethnic minority and lower SES individuals are underrepresented in BED treatment (Franko et al., 2012; Thompson-Brenner et al., 2013) for reasons that are insufficiently understood. Clinical and community recognition may play important roles. There is evidence that general barriers to eating disorders treatment, such as proper diagnosis and referral in

clinical contexts, disproportionately affect ethnic minorities (Becker, Franko, Speck, & Herzog, 2003; Ham, Iorio, & Sovinsky, 2012). Poor community recognition of BED, measuring as low as 11.7% and 24.3%, also may be a culprit (Mond & Hay, 2008; Sala, Reyes-Rodríguez, Bulik, & Bardone-Cone, 2013). Some studies have found evidence that ethnic stereotypes may contribute to low community recognition of some types of eating disorders (Becker, Hadley Arrindell, Perloe, Fay, & Striegel-Moore, 2010; Gordon, Perez, & Joiner Jr., 2002), though the data are mixed (Sala et al., 2013). For example, one study found that undergraduates more frequently recognized anorexia nervosa in a white girl (93%) relative to a black or Latina girl (79%) (Gordon et al., 2002), though a more recent study with undergraduates did not find this effect (Sala et al., 2013) and neither study reported an effect of the participant's own ethnicity. These studies were conducted in a college sample, making it unclear whether they apply to a lower SES community population, and no studies to date have examined the relationship between SES and eating disorder recognition.

Evidence indicates that BED is treated most successfully with cognitive-behavioral therapy (CBT) or interpersonal psychotherapy (IPT), which reduce binge eating episodes and core weight-and shape-psychopathology over the long-run (Wilfley et al., 2002; G. Terence Wilson, Wilfley, Agras, & Bryson, 2010). CBT focuses on reducing dietary restraint as a trigger for bingeing and on reshaping disordered cognitions around eating, weight, and shape (Fairburn, 1995, 2008). IPT identifies and manages interpersonal deficits, interpersonal role disputes, grief, and role transitions that contribute to BED onset and maintenance (Wilfley et al., 2002). CBT and IPT are more effective than behavioral weight loss in producing binge eating remission, which is associated with greater likelihood of reducing body weight by five percent or more (G. Terence Wilson et al., 2010). However, average weight loss in CBT and IPT typically is

statistically but not clinically significant (Wilfley et al., 2002; G. Terence Wilson et al., 2010). Importantly, however, CBT and IPT appear to stabilize BMI over follow-up (Wilfley et al., 2002), meaning that these treatments may effectively interrupt the progressive weight gain seen in the natural course of BED (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000). Stabilization of or a modest decline in BMI likely has positive implications for reducing physical morbidity associated with BED.

The guided self-help (GSH) version of CBT is considered a first-line BED treatment because it is efficacious in treating individuals with less severe psychopathology, numerous types of clinicians with relatively minimal training can facilitate use of a self-help manual, and it may be amenable to technology-assisted dissemination (Shingleton, Richards, & Thompson-Brenner, 2013; G. Terence Wilson et al., 2010; G. T. Wilson & Zandberg, 2012). In GSH CBT, the patient follows a self-help manual while the therapist monitors progress, provides encouragement, and helps identify solutions from within the program (Fairburn, 2013).

Overcoming Binge Eating is the most widely studied self-help / GSH CBT manual and recently was updated to reflect new research (Fairburn, 2013). The first half of the manual offers accessible psychoeducation about binge eating and the second half introduces steps for reducing the behavior, specifically, self-monitoring and weighing, implementing regular eating and alternatives to binge eating, practicing problem solving, and optional modules on dieting and body image (Fairburn, 2013).

Several researchers have explored the use of technology to deliver GSH CBT for eating disorders, including, for example, online self-help manuals, moderated internet discussion groups, and supportive emails (Shingleton et al., 2013). Mobile applications also have been developed to assist with self-monitoring (e.g. of food intake, mood, thoughts, frequency of

weighing) and developing behavioral strategies to delay or avoid binge eating (e.g. providing distractions or alternatives) ("Center for Discovery," 2014; "Recovery Record," 2014; "Recovery Warriors LLC," 2014). For example, some features of Recovery Record, a popular mobile application, include self-monitoring of meals, thoughts, feelings, and behaviors; messaging with one's treatment team; messaging with other users; setting goals; and tracking progress.

Understanding the most effective use of technological assistance in eating disorder treatment requires further research (Shingleton et al., 2013), however, these efforts highlight the importance of innovation and cost-reduction in mental health treatment dissemination to address inequities in care (Kazdin & Blase, 2011).

Treatment initiation and attrition rates provide important measures of feasibility and acceptability of treatment for binge eating. Available data from previous studies indicate initiation rates of 30-91% in GSH CBT studies (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012) and attrition rates of 9-33.3% from GSH conditions (Carrard, Crepin, Rouget, Lam, Golay, et al., 2011; Carrard, Crepin, Rouget, Lam, Van der Linden, et al., 2011; G. T. Wilson & Zandberg, 2012). Attrition from binge eating treatment has been associated with more severe weight-related psychopathology (C. Jones et al., 2012) and ethnic minority status (Thompson-Brenner et al., 2013).

Binge eating remission and frequency typically measure the effectiveness of BED treatment. To date, only one BED treatment study has recruited a predominantly non-white sample (56%), finding that self-help CBT, without therapist guidance, did not outperform usual care on binge eating measures in obese primary care patients with BED (Grilo, White, Gueorguieva, Barnes, & Masheb, 2013). In other studies, GSH CBT has outperformed control

conditions with respect to binge remission and frequency (Carter & Fairburn, 1998; C. B. Peterson, Mitchell, Crow, Crosby, & Wonderlich, 2009; Carol B. Peterson et al., 1998).

Chapter III. Specific Aims and Hypotheses

Specific Aim 1: BED Recognition

The first aim of this study was to measure community recognition of binge eating disorder (BED) in an ethnically diverse community sample of women to understand how such rates compare to data from other samples and how ethnicity and socioeconomic status (SES) influence perceptions of BED. Data were collected from a recognition task in which participants were presented with one of four descriptions of a fictional character with BED, differing on ethnicity and SES (black+lower SES, white+lower SES, black+higher SES, white higher+SES). The purpose of the recognition task was to test the hypothesis that binge eating is not characterized as disordered behavior in the social context of ethnic minority or lower SES, preventing affected individuals and their support systems from interpreting symptoms in a manner that aids treatment.

A. Overall BED recognition rates

Overall BED recognition was expected to be comparable to the 11.7% rate in Mond et al, 2008, which reported on a population-based Australian sample, but was expected to be lower than the 24.3% recognition rate in Sala et al, 2013, which reported on an American college sample (Mond & Hay, 2008; Sala et al., 2013). Participants for this study were drawn from the community rather than a college setting, increasing the likelihood that recognition rates would be closer to the those seen in the Australian population sample. Additionally, lower SES and black American women were recruited to test the hypothesis that low community recognition explains particularly low treatment rates in these groups.

B. BED recognition by case descriptions

It was hypothesized that BED recognition would be lower in lower versus higher SES case descriptions and lower in black versus white case descriptions, when comparing BED recognition rates based on case descriptions.

C. BED recognition by participant characteristics

It was hypothesized that BED recognition would be lower among black+lower SES participants relative to other groups, when comparing BED recognition rates based on participant characteristics (black+lower SES, white+lower SES, black+higher SES, white higher+SES).

Specific Aim 2: Treatment Feasibility and Acceptability

The second aim of this study was to evaluate the feasibility and acceptability of guided self-help (GSH) cognitive behavioral therapy (CBT) for binge eating in in black American women of lower SES.

A. Initiation rate

It was hypothesized that the initiation rate would be in the lower end of the 30-91% range reported in earlier studies of GSH CBT (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012). Although previous studies have found significant variability in initiation rates, no studies have specifically examined interest in GSH CBT for binge eating in lower SES, black American women. It is hypothesized that the low treatment rates seen in this population are at least partially due to external barriers to health care and lack of familiarity with mental health treatment, which would contribute to low treatment initiation rates.

B. Attrition rate

It was hypothesized that the attrition rate would be higher than the 9-33.3% range observed in previous studies (Carrard, Crepin, Rouget, Lam, Golay, et al., 2011; Carrard, Crepin,

Rouget, Lam, Van der Linden, et al., 2011; G. T. Wilson & Zandberg, 2012), given evidence that ethnic minorities are more likely to drop out of BED treatment trials (Thompson-Brenner et al., 2013).

C. Respondent characteristics

It was hypothesized that individuals with greater pre-treatment eating disorder psychopathology would be less likely to complete the study. An exploratory analysis of the effect of BMI on non-initiator versus discontinuer versus completer status also was conducted.

D. Perceptions of self-help CBT effectiveness

This study sought to understand pre- and post-treatment perceptions of GSH CBT using numeric rankings of comfort with and helpfulness of GSH CBT treatment components. This analysis was exploratory, as it has not been addressed in previous studies.

E. Preferences among evidence-based treatments

Ranking and narrative data were collected to understand preferences among binge eating treatment orientations and delivery modes. This analysis was primarily exploratory because the literature does not discuss treatment preferences in this specific population. However, with respect to delivery modes, more participants were expected to prefer treatments with internet or mobile components, which they may perceive as more accessible.

Specific Aim 3: Treatment Effectiveness

The third aim of this study was to evaluate effectiveness of GSH CBT for binge eating in black American women of lower SES.

A. Binge remission

It was hypothesized that binge remission would be higher in the treatment group relative to controls.

B. Binge frequency

It was hypothesized that binge frequency would be lower in the treatment group relative to controls.

Chapter IV. Methods

All study methods were approved by the Vanderbilt University Institutional Review Board (IRB). All surveys used in this study were administered through REDCap, a secure web application for building and managing online surveys and databases that is supported by grant UL1 TR000445 from the US National Institutes of Health. Recruitment was supported by ResearchMatch, a national health volunteer registry that was created by several academic institutions and supported by the U.S. National Institutes of Health as part of the Clinical Translational Science Award (CTSA) program.

Recognition of Binge Eating Disorder (Study 1) Methods

Study 1 used ResearchMatch to recruit 65 black and 65 white adult women to complete a BED recognition task, eating disorder and weight stigma measures, and demographic questions. (See Appendix A.) One hundred thirty participants received \$25 upon completion and 32 additional ResearchMatch volunteers also completed the study. Participants viewed one of four photographic and narrative vignettes that depicted a woman with binge eating disorder (BED) who was either black or white American and described as being of higher or lower socioeconomic status based on education and income (SES). (See Appendix B.) Photographs were similar in age, expression, shape, size, and clothing, available in the public domain, and licensed for non-commercial use. Narrative portions of the vignettes were identical except for ethnicity and SES information and provided a sketch of the fictional character's employment, education, and BED symptoms. After viewing the vignettes, participants provided successive feedback about whether the depicted woman (1) had a problem, (2) a mental disorder, and (3) an eating disorder. If they identified the woman as having any of these conditions, they had an opportunity to submit an open-ended response.

Feasibility of Treatment for Binge Eating (Study 2) Methods

1. Recruitment and Screening of Participants

Recruitment occurred through Facebook and ResearchMatch. Facebook advertisements (See Appendix C) were shown to black American, adult, female users who used mobile devices, had not obtained a four-year college degree, and were interested in weight loss, dieting, nutrition, or Zumba. Advertisements included pictures of food and the words “Eat unusually large amounts of food? Feel like you’ve lost control over your eating?” They linked participants directly to the screening survey (described below) or to the Facebook page created for this study, which further stated “You may be eligible for a study conducted by researchers at Vanderbilt University. Eligible participants will receive compensation for their participation in an online study and also may receive help for their eating” and provided a link to the screening survey. Language used in the Facebook advertisements also was emailed to random samples of ResearchMatch volunteers who were black American, adult women and whose BMI ≥ 25 .

Interested respondents completed an online screening survey to determine eligibility. (See Appendix D.) Electronic signatures of the informed consent screening document were captured via the survey; the IRB waived collection of pen and paper signatures. Inclusion criteria were: female sex, age ≥ 18 years, self-identified as black or African American, BMI ≥ 24 , and DSM-5-defined binge eating, i.e. eating an unusually large amount of food given the circumstances which means “eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances,” while also experiencing a lack of control over the behavior (American Psychiatric Association, 2013). Other symptoms of the full BED diagnosis were not required. Exclusion criteria were: moderately severe depression indicated by a Patient Health

Questionnaire Depression (PHQ-8) score ≥ 15 (Center) and \geq two episodes of self-induced vomiting or inappropriate laxative or diuretic use. Respondents provided an email address or mobile number for receiving text messages.

2. Participant Activity and Data Collection

Eligible respondents were offered the opportunity to complete the initial survey, randomized to the GSH or control condition, and then contacted to complete the follow-up survey.

Initial Survey

Electronic signatures of the informed consent document for study participation were captured via the initial survey, which also collected data regarding BED recognition, eating disorder symptoms, binge eating treatment preferences, ratings of the GSH program offered in this study, and demographic characteristics. (See Appendix E.) Eligible respondents were randomized to one of four versions of the initial survey, which differed by case description presented in the BED recognition task described in the Recognition of Binge Eating Disorder (Study 1) Methods section above. Participants self-reported information about current eating disorder symptoms and related psychopathology through the Eating Disorder Examination Questionnaire (EDE-Q) (Fairburn & Beglin, 2008) and the Binge Eating Disorder module from the Eating Disorder Examination (EDE) interview (Fairburn, Cooper, & O'Connor, 2014). They also answered questions about history of eating disorder diagnosis, diabetes diagnosis, and exposure to food insecurity or scarcity. On a visual scale of 0-100, where 0 = not comfortable, 50 = neutral, and 100 = very comfortable, participants ranked their degree of comfort with the following treatment options for an eating problem: book-based self-help, online/mobile self-help, peer-led group program, individual therapy, therapist-led group therapy, CBT, interpersonal

psychotherapy, and behavioral weight loss. On the same scale, they also ranked their degree of comfort with and pre-treatment perception of the helpfulness of the book-based, electronically therapist-guided, mobile application-assisted GSH CBT program offered in this study.

Participants also answered questions regarding education and income/wealth. Those who completed the initial survey received a check for \$10.

GSH condition

After completing the initial survey, participants were randomized to the GSH treatment or control condition. Participants in the GSH treatment condition received a paperback version of the *Overcoming Binge Eating* treatment manual and a link to download the Recovery Record mobile application to assist with self-monitoring. (See Appendix F.) GSH participants received weekly emails summarizing steps in the treatment manual and encouraging program adherence or resumption. Communication with the GSH participants (see Appendix G) followed the structure of the treatment manual, progressively focusing on psychoeducation, self-monitoring and weighing, implementing regular eating, implementing alternatives to binge eating, practicing problem-solving, and addressing dieting and body image, as needed. Emails also included the treatment manual's self-monitoring forms for those participants who may have opted not to use the mobile application. (See Appendix H.) GSH participants had the opportunity to email the study team with the expectation of a once-weekly response.

Follow-up Survey

After approximately eight weeks, all GSH and control participants received the follow-up survey via email. (See Appendix I.) It captured information regarding body mass index, eating disorder symptoms via the EDE-Q and EDE interview BED module, degree of interaction with treatment components, 0-100 ratings of comfort with and helpfulness of the GSH program

offered, barriers to treatment, and open-ended feedback. All participants who completed the follow-up survey received a check for \$15.

3. Sample Size Analysis

Sample size analyses with 80% power and a two-sided significance level of 0.05 were conducted for post-treatment binge eating, a primary quantitative outcome with sufficient previous data for sample size analyses. Post-treatment binge eating in the GSH treatment and control conditions was measured by mean frequency of binges in the previous month and the proportion of individuals in remission from binge eating. A sample size of 70 per group was expected to detect a binge remission difference of 22% between treatment and control participants, based on data where post-treatment binge remission was 15% for controls and 37% for those treated, which is the smallest difference in proportions observed in previous data (Ljotsson et al., 2007). Sample size based on binge frequency was calculated in two different ways because of the differences in standard deviations in previous data (Carter & Fairburn, 1998; Grilo & Masheb, 2005; Ljotsson et al., 2007; C. B. Peterson et al., 2009). Power table 8.3.12 in Cohen 1988 (Cohen, 1988) indicates that a sample size of 64 per group is needed to detect a medium effect ($f = .25$) where power = .8 and alpha = .05 (Cohen, 1988). Sample size analyses based on means and standard deviations from previous data indicated that a sample size of 67 per group would permit detection of a post-treatment binge frequency difference of 9 between treatment and control participants, based on data where post-treatment binge frequency was 11.7 (sd=18.4) for controls and 2.7 (sd=3.7) for those treated (Ljotsson et al., 2007). Final study sample size of 140 was based on the slightly larger number (70 per group) from the binge remission analysis. Although sample size analyses indicated the appropriateness of this goal, a

primary question this study sought to answer was the feasibility of achieving target sample sizes in the target population.

Chapter V. Results

All analyses were conducted with SPSS 24 for Mac and used a significance level of 0.05.

Participants in Recognition of Binge Eating Disorder (Study 1) sample

One hundred fifty-eight of the 162 participants recruited for Recognition of Binge Eating Disorder (Study 1) met criteria for the sociodemographic analyses* and are described in the following table. Funding for Study 1 permitted compensation for 65 black and 65 white participants. Due to high interest among potential participants recruited via ResearchMatch, volunteers also were enrolled after meeting target sample size.

Participants in Feasibility of Treatment for Binge Eating (Study 2) sample

Over ten months, 313 individuals completed the screening survey, including 32 recruited via Facebook and 281 recruited via ResearchMatch. Forty-four individuals met the screening requirements outlined in the Methods section and were invited to participate. Eighteen individuals declined to participate, 13 were randomized to the control group, and 13 were randomized to the GSH treatment group.

Participant Characteristics of Combined Samples

The following table provides participant characteristics for the Study 1 and Study 2 samples. Chi-square tests of independence and ANOVAs were performed to determine significant differences between the samples. Because Study 2 recruited only black participants, a test was not conducted for ethnicity. Participants in Study 1 had higher incomes and education levels, likely partially reflecting the deliberate recruitment of individuals with lower education levels for Study 2. Most Study 2 participants had not completed college and had annual household incomes below \$50,000. In contrast, only 25% of Study 1 participants had not

* The four individuals who did not meet criteria for these analyses provided ambiguous data regarding ethnicity.

completed college and the majority had household incomes greater than \$50,000. Although binge eating was a requirement for inclusion in Study 2, less than a quarter of the Study 2 sample previously had been diagnosed with full-syndrome BED; no individuals had been diagnosed with anorexia nervosa or bulimia nervosa. In keeping with Study 2 inclusion criteria, all participants had BMIs greater than 24. There were no BMI requirements for Study 1 inclusion, which likely accounts for the lower mean BMI in that sample.

Table 1: Participant characteristics: Recognition of Binge Eating Disorder and Feasibility of Treatment for Binge Eating studies						
		Study 1		Study 2		X² or ANOVA
Variable	Category	Frequency	%	Frequency	%	P-value*
Ethnicity	Black/African American	68	43	26	100	NA*
	White/European American	90	57	0	0	
Education	Did not graduate high school or currently in high school	0	0	1	3.8	0.00
	High school diploma/GED	5	3.2	6	23.1	
	Partial or current college	24	15.2	7	26.9	
	Graduated from two-year college	10	6.3	2	7.7	
	Graduated from four-year college	32	20.3	3	11.5	
	Partial graduate or professional school	23	14.6	0	0	
	Graduated from graduate or professional school	64	40.5	7	26.9	
Income	under \$10,000	4	2.5	4	15.4	0.02
	\$10,000 - \$14,999	3	1.9	2	7.7	
	\$15,000 - \$29,999	11	7	2	7.7	
	\$30,000 - \$49,000	40	25.3	10	38.5	
	\$50,000 - \$74,999	42	26.6	6	23.1	
	\$75,000 - \$99,999	25	15.8	2	7.7	
	\$100,000 - \$149,999	19	12	0	0	
	\$150,000 - \$199,999	9	5.7	0	0	
	\$200,000 - \$249,999	3	1.9	0	0	
\$250,000 and above	2	1.3	0	0		
Demographic group(e)**	black+lower SES(e)	15	9.50%	15	57.70%	0.00
	white+lower SES(e)	24	15.20%	0	0.00%	
	black+higher SES(e)	53	33.50%	11	42.30%	
	white+higher SES(e)	66	41.80%	0	0.00%	
Demographic group(i)***	black+lower SES(i)	11	7%	8	30.8%	0.00
	white+lower SES(i)	7	4.4%	0	0%	
	black+higher SES(i)	57	36.1%	18	69.2%	
	white+higher SES(i)	83	52.5%	0	0%	
Previous eating disorder diagnosis	Anorexia Nervosa	4	2.5	0	0	0.31
	Bulimia Nervosa	4	2.5	0	0	
	Binge Eating Disorder	12	7.6	6	23.1	
	Eating disorder not otherwise specified	8	5.1	2	7.7	
BMI	(mean, standard deviation)	29.65	8.04	36.90	5.45	0.00

*Only black American participants were recruited for Study 2.
** SES(e) means higher socioeconomic status is defined as graduation from four-year college or more education.
***SES(i) means higher socioeconomic status is defined as income ≥ \$30,000.

Group Characteristics in Feasibility of Treatment for Binge Eating (Study 2) sample

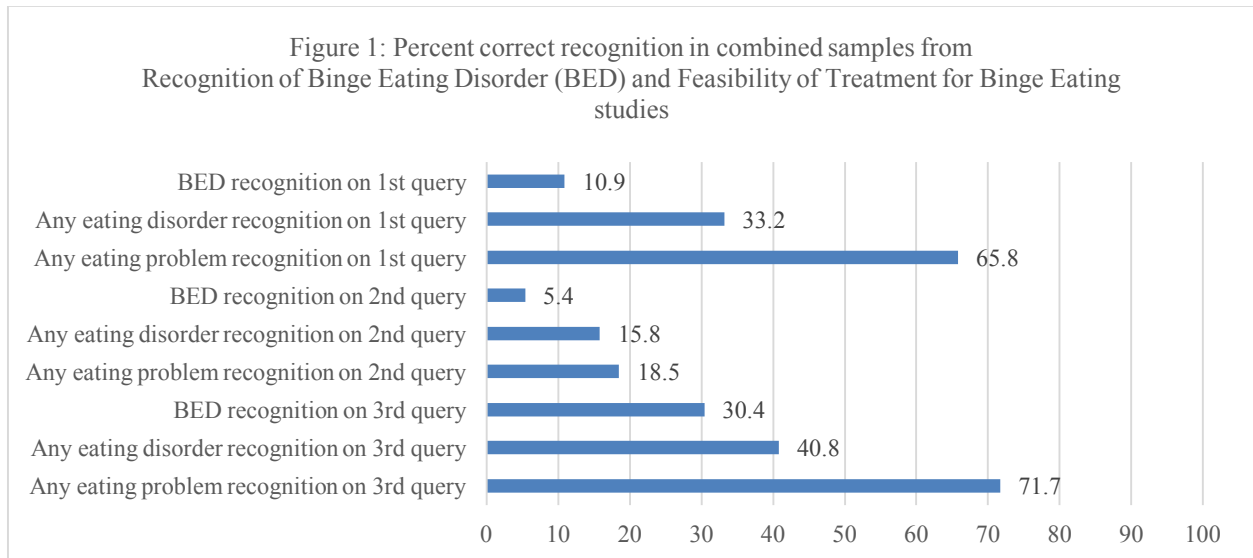
Chi-square tests of independence and ANOVA were used to detect differences between guided self-help (GSH) treatment and control groups. Among individuals randomized to the GSH condition, more discontinued participation after the initial survey and fewer completed the final survey. GSH and control participants were comparable with regard to education, income, home ownership, previous eating disorder diagnoses, and BMI. Group characteristics are presented in Table 2, below.

Variable	Category	Control		Guided self-help (GSH)		Chi-square or ANOVA p-value
		Frequency	%	Frequency	%	
Study participation	Discontinued after initial survey	1	7.7	3	23.1	0.00
	Completed study	12	92.3	10	76.9	
Education	Did not graduate high school or currently in high school	0	0	1	7.7	0.22
	Graduated high school or received GED	3	23.1	3	23.1	
	Partial or current college	6	46.2	1	7.7	
	Graduated from two-year college	0	0	2	15.4	
	Graduated from four-year college	1	7.7	2	15.4	
	Graduated from graduate or professional school	3	23.1	4	30.8	
Income	under \$10,000	2	15.4	2	15.4	0.41
	\$10,000 - \$14,999	1	7.7	1	7.7	
	\$15,000 - \$29,999	0	0	2	15.4	
	\$30,000 - \$49,000	6	46.2	4	30.8	
	\$50,000 - \$74,999	4	30.8	2	15.4	
	\$75,000 - \$99,999	0	0	2	15.4	
Home ownership	Not a home owner	9	69.2	6	46.2	0.23
	Home owner	4	30.8	7	53.8	
Previous eating disorder diagnosis	Binge Eating Disorder	4	30.8	2	15.4	0.35
	Eating disorder not otherwise specified	2	15.4	0	0	
BMI	mean, standard deviation	36.8	4.2	37	6.6	0.90

Specific Aim 1: BED Recognition

All BED recognition analyses were conducted with the combined samples from Study 1 and Study 2. Participants had three opportunities to identify BED. In succession all were asked to respond yes or no to whether the fictional character in the case description had a problem, a mental disorder, or an eating disorder. Those who responded yes had the opportunity at each query to provide an open-ended response, which was categorized as BED, any eating disorder (including BED), or any eating problem (including an eating disorder, as well as descriptions such as “emotional overeating”). Therefore, there are three binary variables representing correct BED recognition on the first, second, and third queries, as well as six additional binary variables representing any eating disorder recognition and eating problem recognition on each query.

Figure 1 depicts percentages of correct recognition for each response category on each query.



A. Overall BED recognition rates relative to previous studies

Chi-square goodness of fit tests (Franke, Ho, & Christie, 2011) were used to compare overall BED recognition in the combined sample to rates measured in previous studies. As hypothesized, BED recognition on the first query was not significantly different from the 11.7%

rate observed in the Australian population sample (Mond & Hay, 2008) but was significantly lower than the 24.3% rate observed in the American college sample (Sala et al., 2013). On the second query, BED recognition was significantly lower than both previously observed rates. On the third query, BED recognition was higher than the previously observed rate of 11.7% but not significantly different from the previously observed rate of 24.3%. The following table shows BED recognition on each query in comparison to previously observed rates. These results confirm the hypothesis that initial BED recognition would be comparable to 11.7% but lower than 24.3%.

Table 3: BED recognition relative to previous studies

Query	Did not recognize BED	Recognized BED	Total	compared to 11.7% rate in Mond, 2008			compared to 24.3% rate in Sala, 2013		
				Chi-Square	df	p value	Chi-Square	df	p value
BED recognition on 1st query	89.1%	10.9%	184	0.123	1	0.73	18.042	1	0.00
BED recognition on 2nd query	94.5%	5.5%	183	6.887	1	0.01	35.294	1	0.00
BED recognition on 3rd query	69.6%	30.4%	184	62.513	1	0.00	3.765	1	0.05

B+C. BED recognition by case descriptions and participant demographic groups

Logistic regressions were conducted for each of the nine recognition variables to determine whether case description or participant demographic group impacted recognition, while controlling for BMI and previous eating disorder diagnosis. Case descriptions were categorized as black+lower SES, white+lower SES, black+higher SES, and white+higher SES based on education and income descriptions in the photographic and narrative vignettes (see Appendix B). Participant demographic groups were created using the same four categories. However, two sets of analyses were conducted based on two definitions of SES used to create participant demographic groups. In one set of analyses, education served as a proxy for SES, with education greater than or equal to a four-year college degree placing individuals in the

higher SES category. In the second set of analyses, higher SES was defined as income greater than or equal to \$30,000. This income level was chosen as a cutoff because it appeared to most meaningfully segment a relatively lower income group within this sample, in the absence of additional household and wealth data. (Frequencies and percentages for participant demographic groups are presented in Table 1, above.) Therefore, two sets of logistic regressions were conducted to determine effects of case descriptions and participant demographic group: one set using education-based SES and one set using income-based SES.

Education-based SES used to define participant groups in regression analyses

Significant differences in recognition by case description were observed with respect to recognition of an eating problem on the second query. Relative to case descriptions of white, higher SES women with BED, participants were 80.8% less likely ($\text{Exp}(B)=0.192$, $p=0.051$) to recognize an eating problem in case descriptions of black, lower SES women with BED. No other significant differences by case description emerged. Table 4 below presents results from this regression analysis. This result partially confirmed the hypothesis that BED recognition would be lower in lower versus higher SES case descriptions and lower in black versus white case descriptions. These analyses did not reveal any significant differences based on participant characteristics on any query, contrary to the hypothesis that BED recognition would be lower among black and lower SES participants. No significant effects of BMI or previous eating disorder diagnosis emerged.

Variable	B	S.E.	Wald	Degrees of freedom	P-value	Exp(B) (odds ratio)
Case description reference category: white+higher SES			5.10	3.00	0.17	
Black+lower SES	-1.65	0.84	3.82	1.00	0.05	0.19
White+lower SES	0.26	0.53	0.24	1.00	0.62	1.30
Black+higher SES	-0.08	0.57	0.02	1.00	0.89	0.93
Demographic group reference category: white+higher SES(e)			2.12	3.00	0.55	
Black+lower SES(e)	-20.20	7262.14	0.00	1.00	1.00	0.00
White+lower SES(e)	-0.99	0.71	1.92	1.00	0.17	0.37
Black+higher SES(e)	-0.42	0.49	0.74	1.00	0.39	0.66
Body mass index	-0.01	0.03	0.05	1.00	0.82	0.99
Previous eating disorder diagnosis reference category: no previous diagnosis			5.63	4.00	0.23	
Anorexia nervosa	-1.29	0.78	2.70	1.00	0.10	0.28
Bulimia nervosa	0.41	1.32	0.10	1.00	0.76	1.51
Binge eating disorder	-0.26	1.59	0.03	1.00	0.87	0.77
Eating disorder not otherwise specified / other specified feeding or eating disorder	-0.30	1.00	0.09	1.00	0.77	0.74
Constant	0.41	1.17	0.12	1.00	0.73	1.50

Income-based SES used to define participant groups in regression analyses

Recognition by case description was not significant in these analyses, contrary to the hypothesis of lower recognition in lower SES and black case descriptions. However, significant effects of participant demographic group and previous eating disorder diagnosis emerged. On the third query, white, lower SES women were 6.59 times more likely ($p=0.05$) than white, higher SES women to recognize BED. This result disconfirmed the hypothesis that BED recognition would be lower among lower SES participants. Table 5 below presents results from this regression analysis. Participants with a previous anorexia nervosa diagnosis were 79% less likely ($\text{Exp}(B)=0.21$, $p=0.04$) to recognize any eating disorder on the second query, relative to those without a previous eating disorder diagnosis. Table 6 below presents results from this regression analysis. The effect of previous anorexia nervosa diagnosis also trended toward

significance with respect to any eating problem recognition on the second query ($\text{Exp}(B)=0.24$, $p=0.057$). Although previous eating disorder diagnosis was expected to account for some of the variance in these regressions, no specific hypotheses regarding its effect were made.

Table 5: Logistic regression results regarding any eating disorder recognition on the 3rd query						
Variable	B	Standard error	Wald	Degrees of freedom	P-value	Exp(B) (odds ratio)
Case description reference category: white+higher SES			1.53	3.00	0.68	
Black+lower SES	-0.15	0.51	0.09	1.00	0.77	0.86
White+lower SES	0.26	0.45	0.34	1.00	0.56	1.30
Black+higher SES	-0.29	0.50	0.34	1.00	0.56	0.75
Demographic group reference category: white+higher SES(i)			4.79	3.00	0.19	
Black+lower SES(i)	-0.41	0.64	0.40	1.00	0.53	0.67
White+lower SES(i)	1.89	0.94	4.00	1.00	0.05	6.59
Black+higher SES(i)	0.10	0.38	0.06	1.00	0.80	1.10
Body mass index	0.02	0.02	0.96	1.00	0.33	1.02
Previous eating disorder diagnosis reference category: no previous diagnosis			5.17	4.00	0.27	
Anorexia nervosa	-0.63	0.70	0.82	1.00	0.36	0.53
Bulimia nervosa	-1.06	1.45	0.54	1.00	0.46	0.35
Binge eating disorder	0.76	1.25	0.37	1.00	0.54	2.14
Eating disorder not otherwise specified / other specified feeding or eating disorder	0.38	0.86	0.20	1.00	0.66	1.46
Constant	-1.16	0.99	1.38	1.00	0.24	0.31

Table 6: Logistic regression results regarding any eating problem recognition on the 2nd query						
Variable	B	Standard error	Wald	Degrees of freedom	P-value	Exp(B) (odds ratio)
Case description reference category: white+higher SES			3.65	3.00	0.30	
Black+lower SES	-1.41	0.84	2.78	1.00	0.10	0.25
White+lower SES	0.13	0.54	0.06	1.00	0.81	1.14
Black+higher SES	-0.31	0.61	0.25	1.00	0.62	0.74
Demographic group reference category: white+higher SES			0.78	3.00	0.85	
Black+lower SES	0.09	0.77	0.01	1.00	0.91	1.09
White+lower SES	0.18	0.98	0.03	1.00	0.86	1.20
Black+higher SES	-0.39	0.52	0.56	1.00	0.45	0.68
Body mass index	-0.03	0.04	0.90	1.00	0.34	0.97
Previous eating disorder diagnosis reference category: no previous diagnosis			6.22	4.00	0.18	
Anorexia nervosa	-1.56	0.75	4.36	1.00	0.04	0.21
Bulimia nervosa	0.11	1.30	0.01	1.00	0.93	1.11
Binge eating disorder	-0.77	1.43	0.29	1.00	0.59	0.46
Eating disorder not otherwise specified / other specified feeding or eating disorder	-1.05	1.00	1.10	1.00	0.29	0.35
Constant	0.96	1.22	0.62	1.00	0.43	2.62

Specific Aim 2: Treatment Feasibility and Acceptability

A. Initiation rate

The following table shows initiation, attrition, and completion rates. The initiation frequency equals the number of participants who passed the screening and went on to complete the initial survey to enter the study. The attrition frequency equals the number of participants who completed the initial survey but did not complete the follow-up survey. The completion frequency equals the number of participants who completed both initial and follow-up surveys.

As hypothesized, the 59.1% initiation rate observed here was in the lower to middle range of 30-91% initiation rates observed in other studies of GSH CBT (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012).

Table 7: Study initiation, attrition, and completion rates			
	Frequency	Percentage of total actual participants (N=26)	Percentage of total invited to participate in study
Initiation	26	100.0%	59.1%
Attrition	4	15.4%	9.1%
Completion	22	84.6%	50.0%
Total invited to participate in study	44	--	--

B. Attrition rate

The previous table shows the study attrition rate of 15.4% attrition rate, which includes one control participant (3.8%) and three GSH treatment participants (11.5%). Contrary to the hypothesis of higher attrition, the rate observed was comparable to rates observed in other studies of GSH CBT, where attrition rates from the treatment group ranged from 13-33% (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012).

C. Respondent characteristics

Independent samples t-tests indicated that pre-treatment EDE-Q scores (restraint, weight concerns, shape concerns, eating concerns, and global eating disorder pathology) did not predict discontinuer versus completer status.* This analysis did not confirm the hypothesis that individuals with greater pre-treatment eating disorder psychopathology would be less likely to complete treatment. Table 8 below presents results.

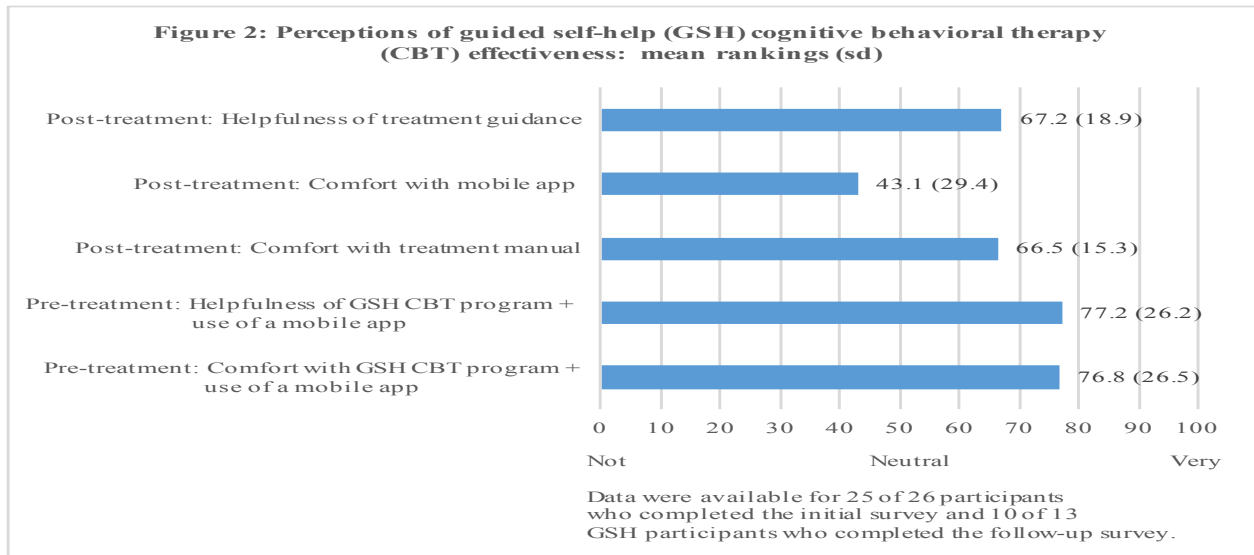
Independent samples t-tests indicated that BMI did not predict study initiation or completion. This analysis was exploratory. Table 8 below presents results.

* Only partial EDE-Q data was available for one participant. The last observation was carried forward to derive her EDE-Q scores.

Table 8: Impact of body mass index (BMI) and initial Eating Disorder Examination-Questionnaire (EDE-Q) scores on study participation								
Variable	Study participation	Frequency	Percentage	Mean	Standard deviation	T-statistic	Degrees of freedom	P-value
Initial BMI*	Did not initiate	18	40.91%	36.48	5.94	0.25	42.00	0.81
	Initiated	26	59.09%	36.90	5.45			
Initial BMI	Discontinued	4	15.38%	38.31	5.88	0.55	24.00	0.59
	Completed	22	84.62%	36.65	5.48			
EDE-Q Restraint	Discontinued	4	15.38%	1.95	1.48	-0.51	24.00	0.61
	Completed	22	84.62%	2.38	1.57			
EDE-Q Eating Concerns	Discontinued	4	15.38%	1.85	1.90	0.81	24.00	0.43
	Completed	22	84.62%	1.25	1.25			
EDE-Q Shape Concerns	Discontinued	4	15.38%	3.19	1.83	-1.17	24.00	0.26
	Completed	22	84.62%	3.94	1.06			
EDE-Q Weight Concerns	Discontinued	4	15.38%	3.40	1.86	0.47	24.00	0.65
	Completed	22	84.62%	3.12	0.96			
EDE-Q Global score	Discontinued	4	15.38%	2.60	1.44	-0.13	24.00	0.90
	Completed	22	84.62%	2.67	0.98			

D. Perceptions of GSH CBT effectiveness

The following graph shows GSH participants’ degree of comfort with and perceptions of the helpfulness of the GSH CBT program offered in this study. Most mean rankings were greater than 50, indicating better-than-neutral average perceptions of most GSH CBT components. The lowest ranking was for post-treatment comfort with the mobile application used to track progress. This analysis was exploratory, given the absence previous data for comparison.



Participants also had an opportunity to provide open-ended responses regarding their perceptions of GSH CBT. Before randomization to treatment and control groups, individuals answered “What would you like to see in a treatment program for your eating problem? Open-ended responses were coded according to themes that emerged; several responses endorsed more than one theme. Most people expressed interest in some type of psychological support, including three references to addressing issues underlying eating problems and two explicit references to individualized support. Two of the individuals who expressed interest in nutrition support specifically mentioned help finding affordable sources of healthful foods. One individual reiterated her interest in the technology-based support (e.g. online or mobile) described in this treatment program. Table 9 below lists all emergent themes and the number of participants who endorsed them.

Table 9: Themes/types of support endorsed in open-ended responses to pre-treatment query: What would you like to see in a treatment program for your eating problem?

Type of support endorsed	Therapy	Nutrition	Weight loss	Exercise	Medical	No response	Peer	General	Technology	Help not wanted
Number of participants	12	6	3	3	3	3	2	2	1	1

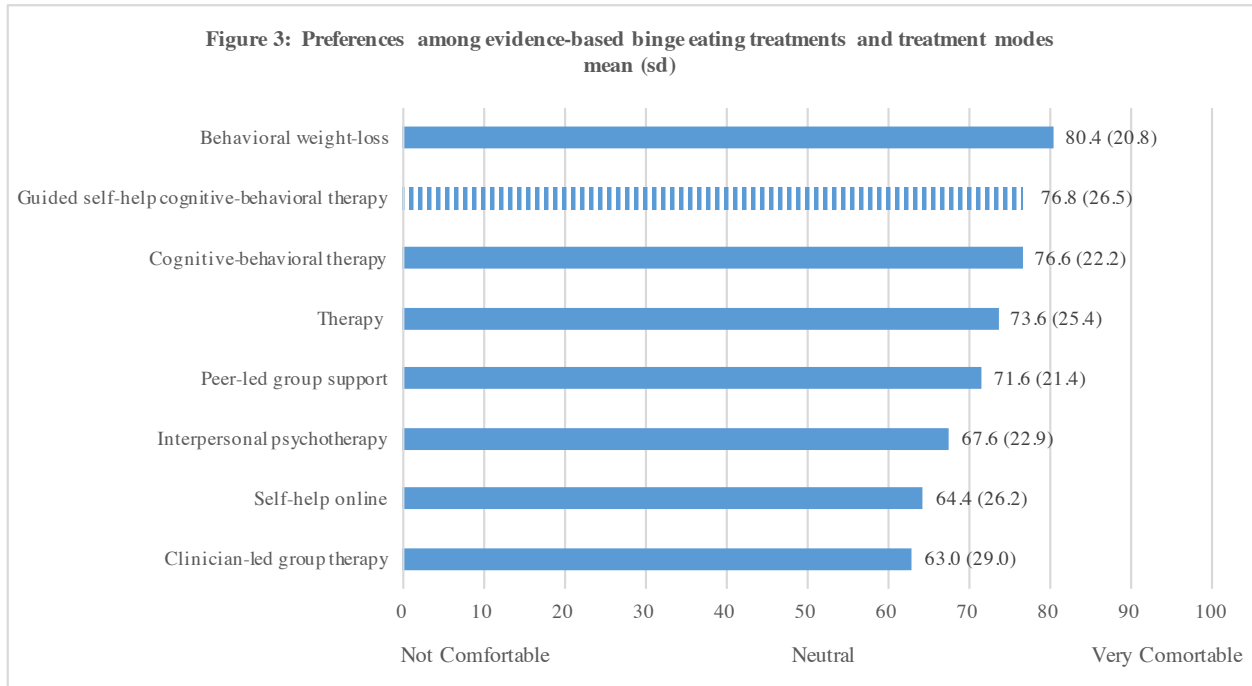
At follow-up, GSH treatment participants answered open-ended questions regarding what they liked and disliked about the treatment manual, mobile application, and messages received throughout treatment. At least seven GSH participants explicitly stated that the treatment manual or messages were helpful or encouraging when asked about likes. Even when asked about dislikes, three participants explicitly claimed no dislikes and two stated not applicable or no comment. Two participants found the program overly time-consuming. Other dislikes expressed were that the treatment manual appeared concentrated on anorexia and bulimia nervosa, the mobile application was not customizable enough, and the treatment manual did not provide sufficient motivation. Tables 10 and 11 below provide participants' verbatim responses.

Table 10: Perceptions of GSH CBT: open-ended responses regarding likes	
What did you LIKE about the book, app, or messages from the treatment team?	Frequency of endorsement by GSH participants who completed follow-up survey
encouragement	1
Hadn't really read the book	1
Happy that they checked in on me to see how my journey was going.	1
I was [i]nterested in the binge and overeating part just don't know why I couldn't follow the direction and complete the program, I think maybe because I thought it really was for anorexia.	1
Information	1
Just easy but hard on phone	1
No comments	1
The book helped you to think ahead and to plan for success. The messages were encouraging and reviewed ways from the book to keep you on track.	1
The techniques that were used. By reading the book it gave me some pointers on how to control my eating.	1
useful reminders	1

Table 11: Perceptions of GSH CBT: open-ended responses regarding dislikes	
What did you DISlike about the book, app, or messages from the treatment team? What else made it hard for you to participate?	Frequency of endorsement by GSH participants who completed follow-up survey
Nothing	2
A little long	1
Time consuming	1
Did not dislike anything, it began my journey of enlightening in which I need to take control of my eating habits.	1
That the book was really concentrated on bulimia and anorexia.	1
The app could have been better fine tuned to what I wanted, and if need be able to adapt or change as needed. Also I had a lot of other personal stuff going on that made it hard to concentrate	1
The book made it sound so easy. It is not easy to get started and to stay motivated.	1
NA / No comments	2

E. Preferences among evidence-based treatments and modes of treatment delivery

In the initial survey (N=26), participants ranked their comfort with evidence-based treatments and modes of delivery for binge eating on a scale of 0 to 100, with 0 indicating not comfortable, 50 indicating neutral, and 100 indicating very comfortable. All mean rankings were greater than 50, indicating better-than-neutral perceptions of treatment options described. Behavioral weight loss received the highest ranking, followed by CBT and interpersonal psychotherapy. Regarding treatment modes, participants ranked one-on-one therapy highest. Online self-help was ranked more highly than clinician-led group therapy or self-help via a book, but lower than one-on-one therapy or peer-led group support. Figure 3 below presents results. This analysis was primarily exploratory because previous research has not addressed treatment preferences in this specific population. However, with respect to delivery modes, more participants were expected to prefer treatments with internet or mobile components; results did not confirm this hypothesis.



Specific Aim 3: Treatment Effectiveness

A. Binge remission

A chi-square test of independence was conducted to determine significant differences in binge remission between treatment and control participants. As shown in the table below, there were no significant differences between treatment and control participants on binge remission. Two GSH and three control participants achieved binge remission. The rate of binge remission was hypothesized to be higher in the treatment group relative to controls. Results did not confirm this hypothesis; small sample size for this analysis may contribute to inability to detect significant findings.

Table 12: Binge remission

Number of binges in previous 28 days	Control participants	GSH participants	Total
0	3	2	5
≥1	9	8	17

Pearson Chi-Square = 0.78, df = 1, p = 0.781

B. Binge frequency

An analysis of covariance, using pre-treatment binge frequency as a covariate, was conducted to determine significant differences in post-treatment binge frequency between treatment and control participants. Binge frequency was not significantly different between treatment and control groups, when controlling for pre-treatment binge frequency ($F = 0.02$, $p = 0.88$). Nor were there significant group differences in the number of days on which bingeing occurred ($F = 0.10$, $p = 0.75$) or the number of occasions on which participants ate unusually large amounts of food (but did not experience loss of control, as required to meet the clinical definition of bingeing ($F = 0.32$, $p = 0.86$)). Binge frequency was expected to be lower in the treatment group relative to controls. Results did not confirm this hypothesis; small sample size for this analysis may contribute to inability to detect significant findings.

Chapter VI. Discussion

Goals of this projects were to examine BED recognition as a barrier to care among ethnically and socioeconomically diverse women and the feasibility and acceptability of guided self-help (GSH) cognitive behavioral therapy (CBT) for binge eating in a lower socioeconomic status (SES) sample of black American women. Two studies were conducted. In the Recognition of Binge Eating Disorder (Study 1), black and white women responded to a computerized protocol depicting BED in black and white women of higher and lower socioeconomic status (SES). This recognition task also was presented to participants in the Feasibility of Treatment for Binge Eating (Study 2), a pilot study in which participants were randomized to a control or GSH CBT condition.

Implications

BED recognition was analyzed using a combined sample of 158 black and white American women of higher mean SES (Study 1) and 26 black American women of lower mean SES (Study 2). BED recognition was very low in the combined sample, with only 10.9% of participants correctly identifying the disorder on the first attempt. This rate is comparable to the 11.7% rate observed in Australian population-based sample (Mond & Hay, 2008) and lower than the 24.3% rate observed in an American college sample (Sala et al., 2013). This finding indicates that very low community recognition across various demographic groups may contribute to under-treatment of BED.

Two sets of analyses were conducted to explore the effects of case descriptions and participant demographic groups on BED recognition. In one set of analyses, participant demographic groups were defined by ethnicity (black or white American) and education-based SES (four-year college degree or more indicating higher SES). The second set of analyses used

ethnicity and income-based SES (\geq \$30,000 indicating higher SES) to define participant demographic groups.

Some support for BED recognition differences based on case descriptions emerged. No differences were found in the income-based analyses. In the education-based analyses, participants were less likely ($p=0.05$) to identify a general eating problem in the black, lower SES vignette versus the white, higher SES vignette on participants' second opportunity to identify BED. This finding supports study hypotheses by suggesting that lower community recognition of BED in black, lower SES women may disproportionately contribute to low overall BED recognition rates. It also may provide some support for the hypothesis that BED symptoms in black, lower SES women are less likely to be interpreted in ways that aid treatment. The fact that BED recognition was not also lower for the white, lower SES vignette, suggests that cultural rather than purely socioeconomic factors may contribute to low BED recognition rates.

Some support for BED recognition differences based on participant demographic groups emerged. Education-based analyses did not reveal differences by ethnic or socioeconomic differences among participants. However, income-based analyses showed that white, lower SES women were 6.59 times more likely than white, higher SES women to recognize BED on the third query. This finding disconfirmed the hypothesis that BED recognition would be lower among lower SES participants. Explanations for this finding are unclear. One possibility is that the under-treatment of BED in lower SES women makes the problem more salient in certain white, lower SES communities. Perhaps this effect was observed among white, but not black, lower SES women due to cultural differences in whether symptoms are interpreted as needing treatment. That is, white, lower SES women may be more likely than their black counterparts to view binge eating as a problem needing professional intervention, despite the fact that they

generally do not receive it. If so, white lower SES women with binge eating may be a ripe public health target for the sort of low-cost intervention examined in this study. However, more research is needed to replicate and explain the finding of greater BED recognition in this group.

The inclusion of SES was a novel feature of this study. The intersection of ethnicity and SES is complicated because these characteristics often represent cultural factors and other experiences that are difficult to capture with dichotomous variables. Income-based and education-based definitions of SES were used to counterbalance limitations of using a single determinant. The use of income as a determinant of SES could have categorized as lower SES some individuals who may not be considered lower SES by education or other measures. The use of college graduation as a binary determinant of SES could have categorized as lower SES college students who may not be considered lower SES by other measures. Although some effects of SES were observed, it is important to point out that 93.5% of participants in the combined sample had completed at least some college work, suggesting that SES representation may not have been broad enough to observe all potential differences in BED recognition. Further studies in this area should explore means of increasing lower SES representation.

Although previous diagnosis was included as a covariate because it was expected to account for some proportion of the variance in BED recognition, the significant effects observed in the income-based analyses were not hypothesized. The finding that previous anorexia nervosa diagnosis predicted lower recognition was surprising, as personal familiarity with eating disorders might have been expected to increase likelihood of recognition. One potential explanation for this finding is that current anorexia nervosa may have distorted these individuals' perceptions of disordered versus typical eating behavior.

The Feasibility of Treatment for Binge Eating (Study 2) sample provided data to examine feasibility, acceptability, and effectiveness of GSH CBT in an underserved group. Fifty-nine percent of eligible women participated in the study and 84.6% of participants completed follow-up measures. As hypothesized, the initiation rate was in the middle range of previously observed rates of 30-91% in GSH CBT (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012). This finding suggests that black women are not uniquely disinclined to participate in GSH CBT for binge eating, but leaves open the possibility that their barriers to care are different. The 15.4% attrition rate also is comparable to attrition rates from the treatment group in previous studies of GSH CBT, which ranged from 13-33% (M. Jones et al., 2008; Carol B. Peterson et al., 1998; G. T. Wilson & Zandberg, 2012). This finding was contrary to the hypothesis of an above average attrition rate, given evidence that ethnic minorities are more likely to drop out of BED treatment trials (Thompson-Brenner et al., 2013). BMI and pre-treatment eating disorder pathology did not predict whether participants initiated or discontinued study participation. Low attrition may suggest that there is greater need for focus on enrollment relative to retention.

A novel feature of this study was the collection of data regarding black women's perceptions of GSH CBT and other treatment options for binge eating. Most pre- and post-treatment mean rankings of participants' comfort with and perceived helpfulness of GSH CBT indicated a positive degree of acceptability in this population. The exception was post-treatment comfort with having used a mobile application to track treatment data, which had a mean ranking between not comfortable and neutral. These findings indicate that the participants were more comfortable with reading the treatment manual and receiving email guidance than using the mobile application. Participants also indicated a high degree of comfort with other therapies and

modalities for binge eating treatment, all of which received above-neutral mean rankings. Behavioral weight loss received the highest ranking, followed by CBT and interpersonal psychotherapy. One-on-one therapy received the highest ranking, followed by peer-led group support, self-help online, clinician-led group therapy, and reading a self-help book. Taken together, these findings suggest that GSH CBT has a moderate level of acceptability among black American women and should be further researched as a potentially useful intervention in this population.

Treatment effectiveness analyses based on post-treatment binge remission and frequency indicated no significant differences between treatment and control groups. Target sample size for Study 2 was based on numbers needed to detect significant differences in binge remission and frequency between treatment and control groups. Because target sample was not achieved, these analyses are underpowered and limited regarding conclusions about the effectiveness of GSH CBT in this population.

Limitations

Difficulty recruiting the target sample size in Study 2 offers valuable information about reaching black, lower SES women with binge eating. Although Study 1 achieved the goal of recruiting equal numbers of black and white women for the BED recognition task, overall SES was higher than expected (e.g. 40.5% of the Study 1 sample had graduate or professional degrees), raising concerns that the lack of socioeconomic representativeness influenced findings about ethnic differences in BED recognition. Accordingly, Study 2 focused on recruiting a sample of lower SES black American women for comparison with the Study 1 sample. One hundred forty participants were sought based on sample size analyses related to treatment effectiveness outcomes, as explained above. Several factors may explain the low sample size

recruited in Study 2, including advertising limitations, problems inherent to online recruitment, stigma, distrust of research, and other demands on participants' resources.

All recruitment was conducted online, which likely conferred both benefits and drawbacks. It was hypothesized that paying for Facebook advertisements, as opposed to sole reliance on ResearchMatch, would expand access to a black, lower SES population because of Facebook's enormous popularity across various demographic groups. Facebook permits narrowly tailored advertising. The audience selected for this study's advertising campaign was black American, adult, female Facebook users who used mobile devices, had not obtained a four-year college degree, and were interested in weight loss, dieting, nutrition, or Zumba. Additionally, use of Facebook in conjunction with REDCap surveys was expected to minimize the burden on potential participants, by allowing every step of study participation, save reading the treatment manual, to be completed on a mobile device.

Facebook recruitment initially focused on geographic areas with higher concentrations of black women and lower SES individuals, but expanded to a nationwide search due to low screening survey completion. The \$450 advertising budget allowed advertisements to be shown to 88,265 individuals within the target audience over the course of seven months; 1,916 of these viewers clicked on the advertisements, which linked to the screening survey. Thirty-two individuals completed the survey via Facebook and five met inclusion criteria.

Because of the low yield via Facebook, ResearchMatch was used to recruit additional participants. However, in fidelity to the goal of recruiting lower SES women, only those ResearchMatch respondents who had not graduated college were screened into the study. Of the 289 ResearchMatch respondents who completed the screening survey, 39 were invited to participate.

Although a low potential participant to respondent ratio was expected, given that the most conservative estimate of U.S. binge eating prevalence is 4.5% (Hudson et al., 2007), recruitment nonetheless fell below expectations. It seems reasonable to have expected the customized Facebook advertising audience of 88,265 to yield the target sample of 140; however, it is possible that a longer advertising campaign was required for this type of online recruitment. Other possible reasons for low recruitment may have been insufficiently compelling advertisements, discomfort with answering screening questions (e.g. about weight, eating habits) online, literacy demands of the screening survey, discomfort with lack of face-to-face interaction, or preference for more traditional forms of treatment. Although the study was designed to minimize several of these potential burdens, adjustments in advertisements, perceptions of privacy, language, and interpersonal interaction may improve efforts to reach this population.

A related problem is the selection bias inherent in online recruitment. It is difficult to know whether women who responded to advertising for this study are representative of their broader demographic groups to which they belong. For example, the relatively high education level of the combined sample (94.5% completed at least some college work) may mean that the online advertising used here did not reach those with a high school education or less. Online advertising also may have been less effective for those with incomes under \$30,000 (14.1% of combined sample), and especially for those with incomes below \$10,000 (4.3% of combined sample). Individuals successfully recruited online also may have been different in other ways, such as having more or less severe eating pathology than those who did not respond.

Factors beyond study design, including participants' resources, stigma, and perceptions of research, also may have contributed to low recruitment. The time and attention required for

participation in this type of program may have been too costly for individuals with more limited resources. Although online communication was intended to minimize some of these burdens, reading the self-help manual, recording food intake and other symptoms, and focusing on change may have been overly burdensome for individuals with financial and other challenges. Additionally, treatment offered was framed as “help” for a “problem,” but nonetheless was clearly psychological in nature, which may have been off-putting to participants who find the mental health framework stigmatizing or prefer to conceptualize such difficulties in other ways. For example, there is evidence that black Americans demonstrate above average levels of stigma toward mental illness in general (Anglin, Link, & Phelan, 2006; Neighbors et al., 2007; Thompson, Bazile, & Akbar, 2004) and, perhaps, toward eating disorders in particular (Wingfield, Kelly, Serdar, Shivy, & Mazzeo, 2011). Data also support the existence among black Americans of preferences for somatic expressions of illness (Brown, Schulberg, & Madonia, 1996) and receiving treatment from general providers or religious sources (Neighbors et al., 2007; Snowden, 2001; Snowden & Pingitore, 2002). Finally, distrust of research participation is well-documented among black Americans (Freimuth et al., 2001). Such factors may have limited recruitment efforts for a psychological study and may be fruitful targets of future research.

Chapter VII. Conclusion

This study examined BED recognition and treatment in an underserved community. Strengths include the ethnic and socioeconomic diversity of the sample and the collection of treatment acceptability data in this population, addressing gaps in the binge eating literature. The primary limitation of this study was the small sample size recruited for the pilot treatment, limiting the breadth of conclusions.

Findings emphasize that overall BED recognition is low. The degree to which under-recognition contributes to particularly low treatment rates in ethnic minority and lower SES individuals is not entirely clear from the results of this study. Circumstances leading to below average recognition (i.e. when symptoms present in black, lower SES women) may contribute to the treatment disparity without being strong enough to fully explain it. Similarly, pockets of above average recognition (i.e. by white, lower SES women) may not be strong enough to overcome other factors leading to low treatment in that group.

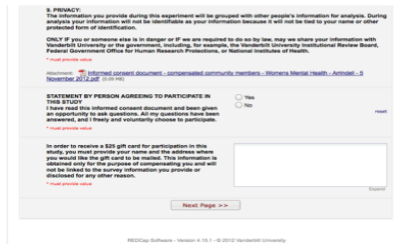
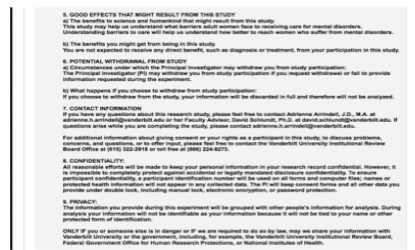
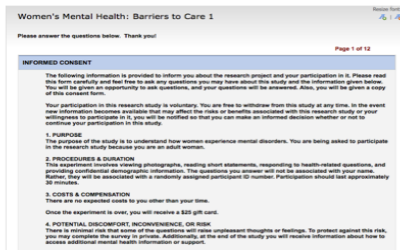
Although this study did not offer conclusive data regarding treatment effectiveness (for reasons detailed above), it is possible that online GSH CBT may have potential as a useful model for first-line binge eating treatment in underserved groups, given its low per-person cost and acceptability observed in this study. Successfully recruited individuals appeared open to a wide range of treatments. The average initiation rate, low attrition rate, and general acceptability rankings of GSH CBT found here support the potential utility of this treatment in particular. However, finding and engaging participants appears to be the biggest barrier to care for online GSH treatment. It appears especially difficult to reach lower SES women through the online tools used in this study (i.e. Facebook, ResearchMatch), suggesting that using other areas of the internet (e.g. other social media or social services websites) or non-electronic forms of

recruitment may better reach this population. The low overall recruitment rate points to the need for further research on how best to meet the needs of this population.

Appendix

A. Recognition of Binge Eating Disorder (Study 1) survey

Participants viewed one of four versions of this survey that differed only by photographic and narrative vignettes, all of which are presented in Appendix B, below.



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The Basics

What is your age?

(in years)

How do you primarily identify your ethnicity or race?

- American Indian or Native American
- Black or African descent
- East Asian or Pacific Islander descent
- Indian subcontinent descent
- Latinx or Hispanic (Black)
- Latinx or Hispanic (White)
- Middle Eastern or Western Asian descent
- Mixed or Other ethnic heritage
- White or European descent

Please include any additional information about your ethnicity or race.

What is your approximate household income? (If you live apart from parents or others who can claim you as a financial dependent, please choose their approximate household income.)

- Under \$10,000
- \$10,000 - \$20,999
- \$20,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$149,999
- \$150,000 - \$199,999
- \$200,000 - \$249,999
- \$250,000 and above

What is the highest level of education you have attained?

- Less than high school
- Some high school
- Graduated high school
- Some college
- Graduated from two-year college
- Graduated from four-year college
- Some post-college graduate or professional school
- Graduated from post-college graduate or professional school

Mary is a 35-year old woman. Since graduating high school, she has worked at several lower wage jobs. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not resort to starving herself, making herself throw up, exercising too much, or using laxatives to make up for it. Her doctor says that she is overweight.

Does Mary have a problem?

Do you think Mary has a problem?

Yes
 No

What kind of problem do you think Mary has?



Does Mary have a mental disorder?

Do you think Mary has a mental disorder?

Yes
 No

Which mental disorder(s) do you think Mary has?

Does Mary have an eating disorder?

Do you think Mary has an eating disorder?

Yes
 No

Which eating disorder does Mary have?

Basic Health Information

How tall are you? _____

How much do you weigh? _____
(in pounds)

Do you have diabetes?
 Yes
 No

Which type of diabetes do you have?
 Type 1
 Type 2
 I am not sure.

How old were you when you were diagnosed with diabetes?

(in years)

Have you ever had an eating disorder?
 Yes
 No
 Unsure

What kind of eating disorder do you or did you have?
 Anorexia Nervosa
 Bulimia Nervosa
 Binge Eating Disorder
 Eating Disorder Not Otherwise Specified

Please indicate your level of agreement with the following statements about individuals with eating disorders (EDs) such as anorexia nervosa, bulimia nervosa, and binge eating disorder.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Their illness is not as serious as other mental illnesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They only care about _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They have not developed an ED if they were stronger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Negative consequences caused by their ED are not their fault.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Their illness is not as serious as other physical illnesses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are not attentive to the needs of others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Their ED represents a weakness in their character.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They caused their ED.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compared to other people's problems, their problem is not a big deal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are self-centered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are weak.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are responsible for their _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The pain caused by their ED is not as important as other people's pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are selfish.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are unintelligent and should know better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are not to blame for their condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The pain caused by their ED is not as significant as other people's pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They only care about looking good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are pathetic for not being able to control their ED.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are obese with looking like supermodels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate how much you agree or disagree with each of the following statements.

	I strongly disagree	I moderately disagree	I slightly disagree	I slightly agree	I moderately agree	I strongly agree
Obesity often occurs when eating is used as a form of compensation for lack of love or attention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In many cases, obesity is the result of a biological disorder.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obesity is usually caused by overeating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people cause their problem by not getting enough exercise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people eat more than nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The majority of obese people have poor eating habits that lead to their obesity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obesity is rarely caused by a lack of willpower.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People can be addicted to food, just as others are addicted to drugs, and these people usually become obese.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

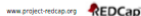
	I strongly disagree	I moderately disagree	I slightly disagree	I slightly agree	I moderately agree	I strongly agree
Obese people are as happy as nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people feel that they are not as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people are more self-conscious than other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese workers cannot be as successful as other workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most nonobese people would not want to marry anyone who is obese.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severely obese people are usually untidy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are usually sociable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people are not dissatisfied with themselves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are just as self-confident as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most people feel uncomfortable when they associate with obese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are often less aggressive than nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people have different personalities than nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very few obese people are ashamed of their weight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most obese people resent normal weight people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are more emotional than nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people should not expect to lead normal lives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are just as healthy as nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people are just as sexually attractive as nonobese people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obese people tend to have family problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One of the worst things that could happen to a person would be for her or him to become obese.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

On how many of the past 28 days . . .

Survey questions with response options: No days, 1-5 days, 6-12 days, 13-15 days, 16-22 days, 23-27 days, Every day. Questions include: Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight... Have you gone for long periods of time (8 waking hours or more) without eating anything... Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight... Have you tried to follow definite rules regarding your eating... Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight... Have you had a definite desire to have a totally flat stomach... Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in... Have you had a definite fear that you might gain weight... Have you felt fat? Have you had a strong desire to lose weight?

Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)? On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?



Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?

Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?

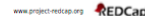
Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories?

Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)? ... Do not count episodes of binge eating.

On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating.

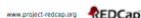
Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating.

Response options for questions 1-5: No days, 1-5 days, 6-12 days, 13-15 days, 16-22 days, 23-27 days, Every day. Response options for question 6: None of the times, A few of the times, Less than half, Half of the times, More than half, Every time. Response options for question 7: Not at all, Slightly, Moderately, Markedly.



Over the past 28 days . . .

Survey questions with response options: 0 Not at all, 1, 2 Slightly, 3, 4 Moderately, 5, 6 Markedly. Questions include: Has your weight influenced how you think about (judge) yourself as a person? Has your shape influenced how you think about (judge) yourself as a person? How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks? How dissatisfied have you been with your weight? How dissatisfied have you been with your shape? How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)? How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)? Over the past three-to-four months have you missed any menstrual periods? If so, how many? Have you been taking the "pill"?



Debriefing for Women's Mental Health: Barriers to Care

Thank you very much for completing this study!

Purpose

The purpose of this study is to see how well women identify the symptoms of binge eating disorder (BED) and whether ethnicity, socioeconomic status, stigma toward eating disorders, or weight bias impact recognition. We also wanted to determine who was most likely to have both diabetes and BED symptoms. Findings are expected to highlight intervention points for appropriate diagnosis and treatment of BED symptoms. Better addressing BED symptoms aims to reduce the mental illness burden of BED and to prevent excess weight gain attributable to BED symptoms, which may in turn prevent and improve management of chronic illnesses associated with overweight and obesity, particularly diabetes.

Fictional Descriptions

The names and written descriptions accompanying the photographs you encountered at the beginning of the study are entirely fictional. Any similarity to real individuals is entirely coincidental. The photographs that appear in the study are provided by Spaxia and Fashion Studio and licensed to the principal investigator through Dreamstime, LLC. Terms and conditions of the licenses are available at http://www.dreamstime.com/terms.

Resources

In the event you would like to learn more about eating disorders or discuss any eating-related issues with a mental health professional, please contact the Eating Disorders Coalition of Tennessee, an organization that provides support and education for Tennesseans impacted by eating disorders. Website: www.edct.net. Phone: (615) 831-9838. Email: contactus@edct.net.

Contact Information

Please remember that none of your identifying information will be included in analyses or articles that may result from this study. Please feel free to contact Adrienne Arrindell, J.D., M.A. (adrienne.a.arrindell@vanderbilt.edu 615.343.1486) with any questions you have about the study or if you no longer want the deidentified information you provided to be included in the study.

This form may be saved to your computer or printed via the link below.

THANK YOU!

B. Photographic and narrative vignettes used in recognition task

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Mary is a 35-year old woman. Since graduating high school, she has worked at several lower wage jobs. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not starve herself, make herself throw up, exercise too much, or take laxatives to try to make up for it. Her doctor says that she is overweight.



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Mary is a 35-year old woman. Since graduating high school, she has worked at several lower wage jobs. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not starve herself, make herself throw up, exercise too much, or take laxatives to try to make up for it. Her doctor says that she is overweight.



Date of Approval: 1/12/2016

01/06/2016 1:32pm



Date of Approval: 1/12/2016

01/06/2016 1:34pm



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Mary is a 35-year old woman. Since graduating from business school, she has had a financially successful career. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not resort to starving herself, making herself throw up, exercising too much, or using laxatives to make up for it. Her doctor says that she is overweight.



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Mary is a 35-year old woman. Since graduating from business school, she has had a financially successful career. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not resort to starving herself, making herself throw up, exercising too much, or using laxatives to make up for it. Her doctor says that she is overweight.



Date of Approval: 1/12/2016

01/06/2016 1:37pm

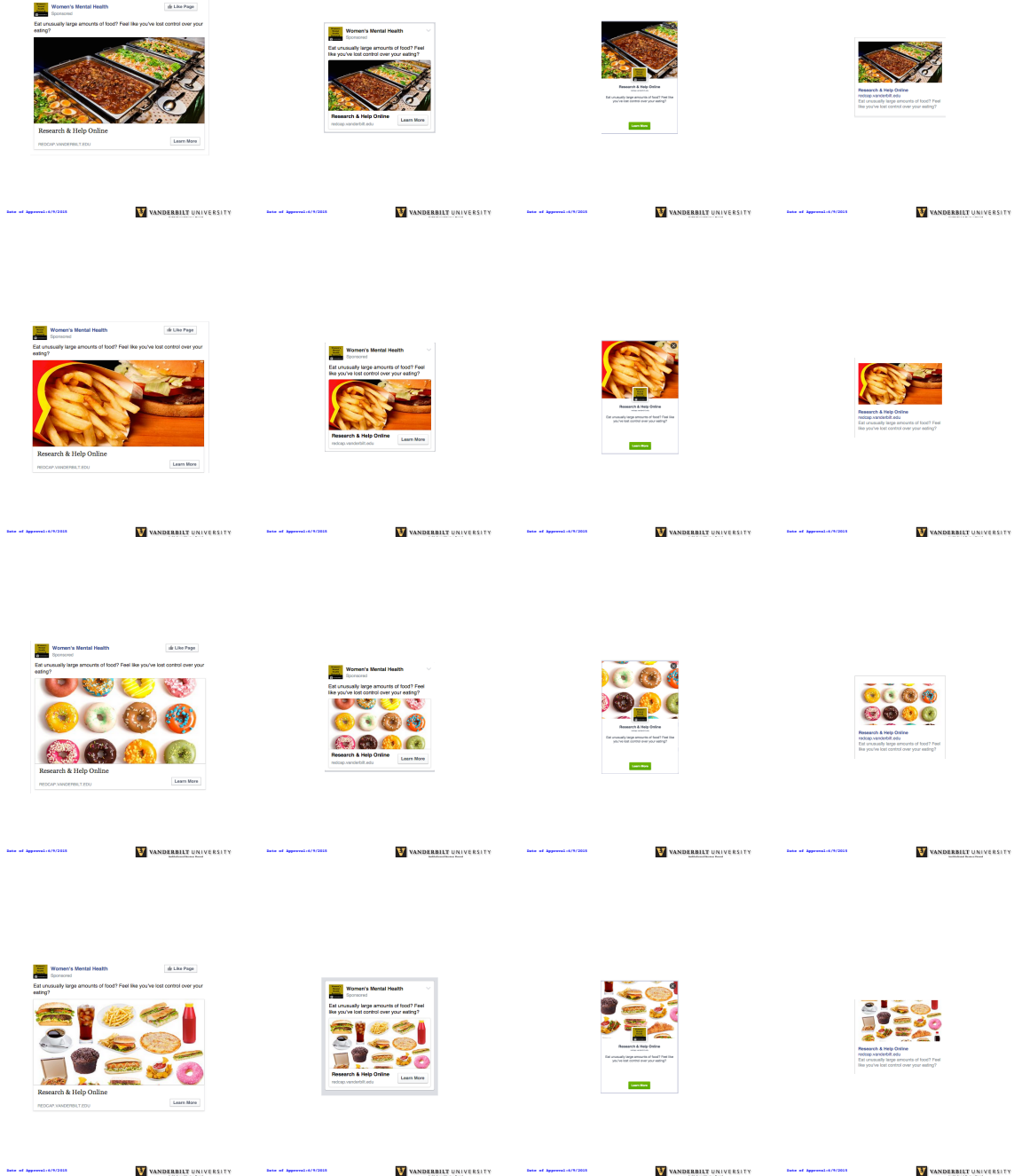


Date of Approval: 1/12/2016

01/06/2016 1:38pm



C. Advertisements for Feasibility of Self-Help Treatment for Binge Eating (Study 2)





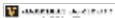
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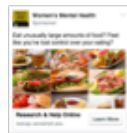
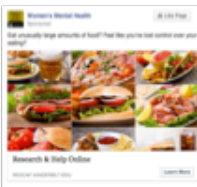
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D. Screening survey for Feasibility of Self-Help Treatment for Binge Eating (Study 2)

Thank you for your interest!
 You may be eligible for a study conducted by researchers at Vanderbilt University. Adult women who are eligible to participate will receive \$25 in checks or gift cards for their participation in an online study and also may receive help for their eating.
 Please answer the questions below to see if you are eligible for our study. It should take no more than two to five minutes of your time.

Vanderbilt University Institutional Review Board
 Informed Consent Document for Research

Principal Investigator: Adrienne Arnold, MA Revision Date: 10 June 2015
Study Title: Women's Mental Health: Return to Care II
Institute/Department: Department of Psychology

This informed consent document applies to people interested in being screened to determine eligibility for research study participation.

You are taking this survey to determine whether or not you are eligible to participate in a research study. This survey will take about 2-5 minutes to complete. Answering these questions is voluntary and you can stop at any time. Answering these questions does not guarantee that you will be selected to participate in the study. Any identifiable information you provide will be held confidential, except in the unlikely event that disclosure is required by law. If you have any questions, you may contact Adrienne Arnold, MA at adarnold@vanderbilt.edu or 615-342-1488 or her faculty advisor, David Salzman, PhD at david.salzman@vanderbilt.edu or 615-322-7920. For additional information about giving consent or your rights as a participant in the study, to discuss problems, concerns, and questions, or to offer input, please feel free to contact the Vanderbilt University Institutional Review Board Office at (615) 322-2918 or toll free at (866) 224-6273.

I have read this informed consent document and been given an opportunity to ask questions. All my questions have been answered, and I freely and voluntarily choose to participate.

Please click the add signature button on your right and use your finger or your mouse to sign here.

You may click here to download or print a copy of the informed consent document.
 (Attachment: "Consent part 1 - screening - 2015-06-12 - clean for date stamping.pdf")

What is your sex?
 Female
 Male
 Other

What is your age?
 17 or younger
 18 or older

How would you describe your race or ethnic heritage?
 American Indian or Native American
 Black or African-American
 East Asian or Pacific Islander
 Indian subcontinent
 Latino/a or Hispanic (Black)
 Latino/a or Hispanic (White)
 Middle Eastern or Western Asian
 Mixed or Other
 White or European-American

How many pounds do you weigh?
 Please enter your height in feet and inches.
 (For example, if you are 5 feet 7 inches, you would enter 5 in the first box and 7 in the second box.)
 feet _____
 inches _____
 BMI (You don't need to enter anything here. This number is calculated automatically from your height and weight.)

In the last month, have there been times when you have eaten what other people would think is an UNUSUALLY LARGE amount of food (given the circumstances)?
 Yes
 No

In the last month, have there been times when you feel like you ate too much, but others might not agree?
 Yes
 No

While you were eating, did you feel like you lost control over your eating?
 Yes
 No

Did you feel like you could have stopped once you started?
 Yes
 No

Did you feel like you could have prevented the eating episode from starting?
 Yes
 No

How long have these eating episodes been going on?
 three months or longer
 less than three months

How often do you have these eating episodes?
 not every week
 once or more per week

During these eating episodes have you typically...
 eaten until you felt uncomfortably full?
 eaten large amounts of food when you haven't felt physically hungry?
 eat alone because you have felt embarrassed about how much you were eating?
 felt disgusted with yourself, depressed, or very guilty?
 How often do you make yourself throw up to control your weight or shape?
 0 to 1 time(s) per week
 2 or more times a week
 How often do you use laxatives (to force a bowel movement) or diuretics (water pills) to control your shape or weight?
 0 - 1 time(s) per week
 2 or more times a week

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Little interest or pleasure in doing things
 Not at all
 Several days
 More than half the days
 Nearly every day

Feeling down, depressed, or hopeless
 Not at all
 Several days
 More than half the days
 Nearly every day

Trouble falling or staying asleep, or sleeping too much
 Not at all
 Several days
 More than half the days
 Nearly every day

Feeling tired or having little energy
 Not at all
 Several days
 More than half the days
 Nearly every day

Poor appetite or overeating
 Not at all
 Several days
 More than half the days
 Nearly every day

Feeling bad about yourself -- or that you are a failure or have let yourself or your family down
 Not at all
 Several days
 More than half the days
 Nearly every day

Trouble concentrating on things, such as reading the newspaper or watching television
 Not at all
 Several days
 More than half the days
 Nearly every day

Moving or speaking so slowly that other people could have noticed? Or the opposite -- being so fidgety or restless that you are having a hard time sitting around a lot more than usual?
 Not at all
 Several days
 More than half the days
 Nearly every day

Confidential

Page 3 of 5

Thank you very much for completing this screening. So that we can let you know whether you are eligible to participate in the study, please enter an email address OR a phone number where you can receive a text. Please double-check the email address or phone number you enter, as it is the only way we will be able to reach you. We will be in touch shortly!

Date of Approval: 8/7/2015

01282015 8:04pm



E. Initial survey for Feasibility of Self-Help Treatment for Binge Eating (Study 2)

Participants viewed one of four versions of this survey that differed only by photographic and narrative vignettes, all of which are presented in Appendix B, above.

Confidential
Women's Mental Health II: Initial survey protocol: 1 Page 2 of 19

Please answer the questions below. Thank you!

Confidential
INFORMED CONSENT Page 2 of 19

Vanderbilt University Institutional Review Board
Informed Consent Document for Research
Revision Date: 4 January 2016

Principal Investigator: Adrienne Arntz, M.A.
Study Title: Women's Mental Health II
Institutional Review Board: Vanderbilt University Department of Psychology

This informed consent document applies to all participants.

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you can print or photocopy a copy of this consent form.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

1. Purpose of the study:
The purpose of this study is to understand how women think about mental disorders and to explore the feasibility of certain treatment options. You are being asked to participate in this study because you are an adult woman.

2. Procedures to be followed and approximate duration of the study:
Part 1 of this study involves taking a short online survey in which you will view photographs, read short statements, and answer health and demographic questions. This survey will take about 12-15 minutes to complete. You will receive a \$10 check or gift card for completing part 1 of the study.
Part 2 of this study involves completing another short, online survey that is very similar to the part 1 survey. You will receive the second survey 8-12 weeks after the first one. This survey will take about 12-15 minutes to complete. You will receive a \$15 check or gift card for completing the second survey.

Between parts 1 and 2 of the study, you may be contacted about participating in a guided self-help program for people who want help with their eating. There is a 50% chance that you will be asked to participate. Participation in this program will last 8-12 weeks and will not require you to go anywhere or purchase anything. You will receive all materials from the study home. You will also be asked to share the Overcoming Binge Eating self-help treatment manual, implement gradual behavior changes, reflect on progress, and keep records of certain thoughts and behaviors related to binge eating. You will not be asked to share this information with anyone. If selected, you will be asked to suspend use of any weight loss diets or medications not prescribed by a physician for the study's duration.

Participation in the guided self-help program will not give rise to a doctor-patient or psychotherapist-patient relationship. There are no guarantees of any specific outcome from participation in the program. Participation in this program will not take the place of routine medical and psychiatric care and you should contact your doctor or 911 if you ever have urgent physical or emotional problems.

At various points during the study, we will communicate with you via email, text message, or Facebook message, depending on preferences you indicate. You are expected to read and, if requested, reply to these messages. You are responsible for whatever you transmit on your phone or internet provider to receive such messages. You also are responsible for controlling who has access to your email, text message, and Facebook accounts.

3. Expected costs:
None, there are no expected costs to you other than your time.

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Date of Approval: 1/12/2016
01/06/2016 1:31pm
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Vanderbilt University Institutional Review Board
Informed Consent Document for Research
Revision Date: 4 January 2016

Principal Investigator: Adrienne Arntz, M.A.
Study Title: Women's Mental Health II
Institutional Review Board: Vanderbilt University Department of Psychology

4. Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:
There is a normal risk that some of the material you read or questions you are asked will raise unpleasant thoughts or feelings. To protect against this risk, you may complete the survey or other study activities in private.

5. Good effects that might result from this study:
a) The benefits to science and humankind that might result from this study:
This study may help us understand how adult women think about mental disorders and what barriers to care may exist for receiving treatment. This information may help us figure out better ways to treat women who suffer from mental disorders.
b) The benefits you might get from being in this study:
It is possible, but not guaranteed, that you will benefit from participating in the program for people who want help with their eating.

6. Alternative treatments available:
Participation in this study does not provide access to treatments other than the possibility of participating in a guided self-help program for people who want help with their eating.

7. Compensation for participation:
You will receive \$10 for completing the part 1 survey. You will receive \$15 for completing the part 2 survey. You also have a 50% chance of receiving the opportunity to participate in a program for people who want help with their eating.

8. Circumstances under which the Principal Investigator may withdraw you from study participation:
The Principal Investigator (PI) may withdraw you from the study if you ask to be withdrawn or do not provide information requested during the study.

9. What happens if you choose to withdraw from study participation:
If you ask to be withdrawn from the study, your information will be discarded in full and therefore will not be analyzed.

10. Contact information:
If you have any questions about this research study, please feel free to contact **Adrienne Arntz, J.D., M.A.** at arntza@vanderbilt.edu or 615-305-0929. You also may contact the study Advisor, **David Schwab, Ph.D.** at david.schwab@vanderbilt.edu or 615-527-7500. The best way to get answers while you are completing the study is to email projectredcap@vanderbilt.edu.
For additional information about giving consent or your rights as a participant in this study, to discuss problems, concerns, and questions, or to offer input, please feel free to contact the Vanderbilt University Institutional Review Board Office at 615-322-0281 or toll-free at 866-224-6273.

13. Confidentiality:
All efforts, within reason, will be made to keep your personal information in your research record confidential but this confidentiality cannot be guaranteed. Once your data is collected, a random number, instead of your name, will be associated with the information you have provided. Your name and other identifying information will be separated from the information you have provided. **Names or other identifying**

2 of 3

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01/06/2016 1:31pm
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Vanderbilt University Institutional Review Board
Informed Consent Document for Research
Revision Date: 4 January 2016

Principal Investigator: Adrienne Arntz, M.A.
Study Title: Women's Mental Health II
Institutional Review Board: Vanderbilt University Department of Psychology

protected health information will not appear in any published data. Only the study team will have access to your name and any other identifying or protected health information. All identifying information will be stored under double lock, including electronic encryption or password protection.

14. Privacy:
Your information may be shared with Vanderbilt or the government, such as the Vanderbilt University Institutional Review Board, Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law. Vanderbilt may use your anonymous, without identifiers, data for other research projects not listed in this form. There are no plans to pay you for projects not listed in this form.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY:
I have read the informed consent document or the medical conditions as it has been explained to me verbally. All my questions have been answered, and I freely and voluntarily choose to participate.

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Do you think Mary has a mental disorder? Yes
 No

Which mental disorder(s) do you think Mary has? _____

Date of Approval:1/12/2016

01/06/2016 1:31pm



Do you think Mary has an eating disorder? Yes
 No

Which eating disorder does Mary have? _____

Date of Approval:1/12/2016

01/06/2016 1:31pm



Basic Health Information

Do you have diabetes? Yes, type 1 or juvenile diabetes
 Yes, type 2 diabetes
 Yes, but I'm not sure which type
 No

How old were you when you were diagnosed with diabetes? _____ (in years)

Have you ever had an eating disorder? Yes
 No
 Unsure

What kind of eating disorder do you or did you have? (If unsure, what type do you think you might have or have had?)
 Anorexia Nervosa
 Bulimia Nervosa
 Binge Eating Disorder
 Eating Disorder Not Otherwise Specified or Other Specified Feeding or Eating Disorder

If you selected Eating Disorder Not Otherwise Specified or Other Specified Feeding or Eating Disorder, you may further describe your eating disorder here. _____

Has there ever been a time in your life when you did not know where your next meal was coming from or did not have enough to eat on a regular basis? (Other than times when you were on a diet or trying to lose weight.) Yes
 No

Date of Approval:1/12/2016

01/06/2016 1:31pm



The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully.

On how many of the past 28 days . . .

	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you gone for long periods of time (6 waking hours or more) without eating anything at all in order to influence your shape or weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite desire to have a totally flat stomach?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Date of Approval:1/12/2016

01/06/2016 1:31pm



I have read this informed consent document or the material contained in it, has been explained to me verbally. All my questions have been answered and I freely and voluntarily choose to participate.

Yes
 No

Please click the "add signature" button to your right and use your finger or mouse to sign here.

You may download or print the informed consent document here.

[Attachment: "Consent part 2 - study participation - 2016-01-06.pdf"]

Date of Approval: 1/12/2016

01/06/2016 1:31pm



Some Basics

Please enter the email address or phone number where you received the link to this survey, for verification purposes.

What is your approximate household income? (If you live apart from parents or others who can claim you as a financial dependent, please choose their approximate household income.)

- Under \$10,000
- \$10,000 - \$14,999
- \$15,000 - \$24,999
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$149,999
- \$150,000 - \$199,999
- \$200,000 - \$249,999
- \$250,000 and above

Does your family own the home you live in?

Yes
 No

How far have you gone in school?

- Did not go to high school
- Did not finish high school or still in high school
- Graduated high school or got GED
- Some college or still in college
- Graduated from two-year college
- Graduated from four-year college
- After college, attended some graduate or professional school
- Graduated from graduate or professional school

Date of Approval: 1/12/2016

01/06/2016 1:31pm



Mary is a 35-year old woman. Since graduating high school, she has worked at several lower wage jobs. When Mary has unpleasant feelings - at least once a week - she eats very large amounts of food very quickly and feels like she cannot control what she is doing. She usually is not hungry when she eats like this and afterwards feels uncomfortably full and guilty. These eating episodes are distressing to her and she tries to hide them from her friends and family because she feels embarrassed. This behavior has been going on for almost a year. Mary tries (unsuccessfully) to avoid eating this way, though she does not starve herself, make herself throw up, exercise too much, or take laxatives to try to make up for it. Her doctor says that she is overweight.



Date of Approval: 1/12/2016

01/06/2016 1:31pm



Do you think Mary has a problem?

Yes
 No

What kind of problem do you think Mary has?

Date of Approval: 1/12/2016

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Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?

Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?

Have you had a definite fear of losing control over eating?

Have you had a definite fear that you might gain weight?

Have you felt fat?

Have you had a strong desire to lose weight?

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Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?

On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?

Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?

During these eating episodes, have you typically...

...eaten much more rapidly than normal?

...eaten until you felt uncomfortably full?

...eaten large amounts of food when you haven't felt physically hungry?

...eat alone because you have felt embarrassed about how much you were eating?

...felt disgusted with yourself, depressed, or very guilty?

In general, over the past three months how distressed or upset have you felt about these episodes?

Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?

Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?

Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories?

Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)? ... Do not count episodes of binge eating.

Date of Approval: 1/12/2016

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On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating.

Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating.

Date of Approval: 1/12/2016

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Over the past 28 days ...

Has your weight influenced how you think about (judge) yourself as a person?

Has your shape influenced how you think about (judge) yourself as a person?

How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?

How dissatisfied have you been with your weight?

How dissatisfied have you been with your shape?

How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?

How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?

Over the past three-to-four months have you missed any menstrual periods?

If so, how many?

Have you been taking birth control?

Date of Approval: 1/12/2016

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Treatment Preferences

How comfortable would you be with the following treatment options for an eating problem?

Addressing your eating problem by following, on your own, a treatment program explained in a book

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Addressing your eating problem by following, on your own, a treatment program you access online or on your phone

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Participating in a program, like Weight Watchers or Overeaters Anonymous, led by people who have a similar eating problem

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Addressing your eating problem by participating in one-on-one treatment with a therapist

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Addressing your eating problem by participating in treatment with a group of people led by a therapist

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

A short-term treatment that addresses your eating problem by focusing on how you think, what you do, and problem-solving

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

A short-term treatment that addresses your eating problem by focusing on solving problems in your relationships with other people

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

A short-term treatment that addresses your eating problem by focusing on changing your behavior to promote weight loss

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Addressing your eating problem by following a treatment plan explained in a book, plus receiving support from a therapist through email or text messages, plus keeping track of your progress through an app on your phone. The book provides scientific information about eating, dieting, and related health issues, then teaches you how to monitor and normalize your eating patterns through changes in your thinking and behavior.

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

How helpful do you think the program described above would be for your eating problem?

0% = Not Comfortable 50% = Neutral 100% = Very Comfortable

=====

(Place a mark on the scale above)

Date of Approval: 1/12/2016

01/06/2016 1:31pm



What would you like to see in a treatment program for your eating problem?

Date of Approval: 1/12/2016

01/06/2016 1:31pm



Contact Information

In order to receive a \$10 check or gift card for completing this part of the study, you must provide your name and mailing address. Please double-check your address.

First name _____

Last name _____

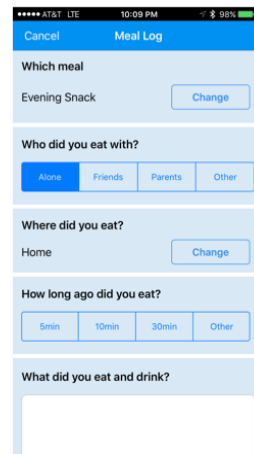
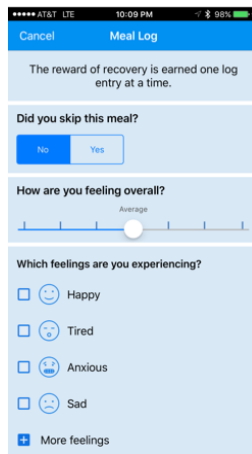
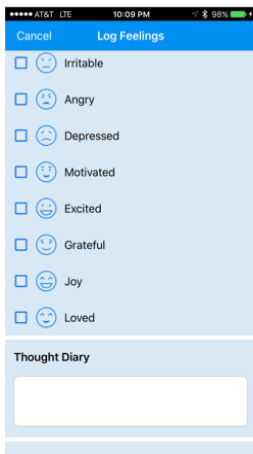
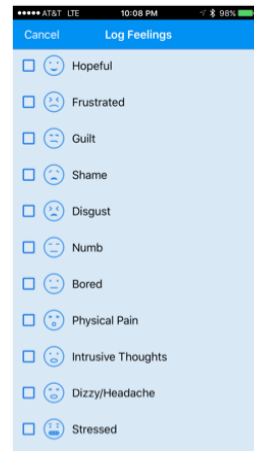
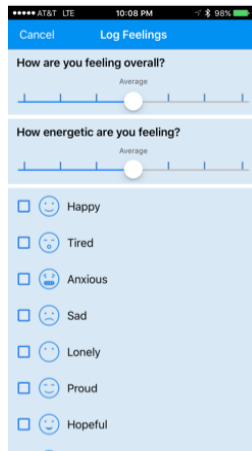
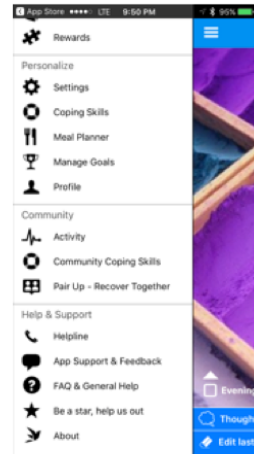
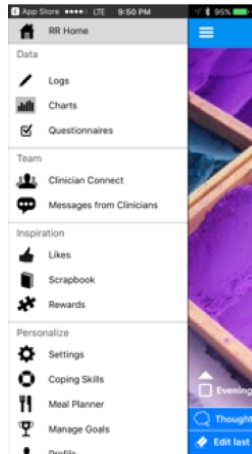
Mailing address _____

Date of Approval: 1/12/2016

01/06/2016 1:31pm



F. Recovery Record mobile application: selected screen shots



Cancel Meal Log

5min 10min 30min Other

What did you eat and drink?

Portion size of what you ate

Inadequate Adequate Excessive

Thought Diary

Submit

Cancel Meal Log

How are you feeling overall?

Average

Did you restrict food intake?

No Yes

E.g. Deliberately limit the amount of food you ate.

How strong is your urge to restrict now?

Not at all

Did you binge?

No Yes

E.g. Eat an unusually large amount of food and experience loss of control.

How strong is your urge to binge now?

Not at all

Back More behaviors

Did you purge by making yourself sick?

No Yes

How strong is your urge to purge now?

Not at all

Did you chew and spit?

No Yes

Did you swallow and regurgitate?

No Yes

Did you hide your food?

No Yes

Back More behaviors

Did you eat in secret?

No Yes

Did you count calories?

No Yes

Have you used laxatives or diuretics since your last log?

No Yes

Have you taken diet pills since your last log?

No Yes

Did you drink alcohol since your last log?

No Yes

Back More behaviors

Did you weigh yourself?

No Yes

Did you body avoid since your last log?

No Yes

Did you body check since your last log?

No Yes

Have you exercised since your last log?

No Yes

Coping Skills

Like Remember at all times: this too will pass. Feeling full will pass. Feeling guilty will pass. Feeling anxious will pass.

Like Slipping up doesn't mean you should give up for the rest of the day. That's like dropping your phone and then trying to smash it.

Like Keep in mind - recovery is about progress, not perfection.

Like It is just food. It is an object. It does not control nor define you. You have the power to control your feelings.

Like When you feel like you're losing control, stop and breathe. Notice how your body feels, what you smell, what you hear, and what you see. It helps to calm and ground.

Like "Fat" is not a feeling...F.A.T.= Find Another Thought

Suggest another skill

About Pair Up

Pair Up allows you to progress through the recovery process with other Recovery Record users. Share feelings, encouragement and the ups and downs and send virtual gifts. If you opt in you will be paired with a new Recovery Record user from anywhere in the world every few days. You can opt out at any time. You pick a nickname or pseudonym, we'll never share your true identity.

Get Started

Back Skill Categories

Behavioral Skills	23
Cognitive Skills	26
Emotion Regulation Skills	17
Interpersonal Skills	9
Mindfulness Skills	31

Back Templates

Select template (you may edit the text later)

Grounding for 5

When experiencing an urge or distressing feeling, look around you and name 5 colors, 5 sounds, 5 things you can touch, 5 things you can taste, and 5 things you can smell.

Create a Committed Action Plan

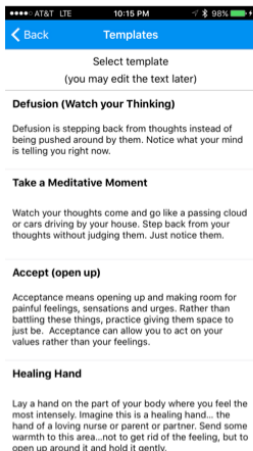
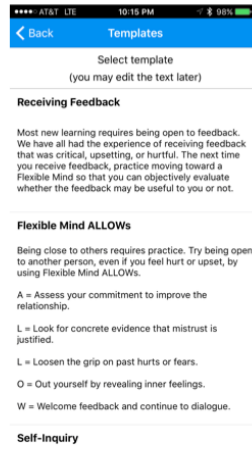
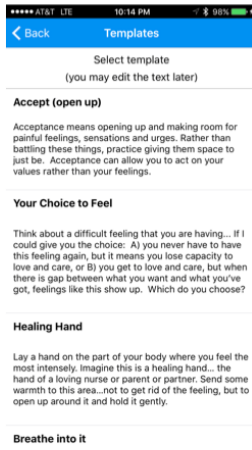
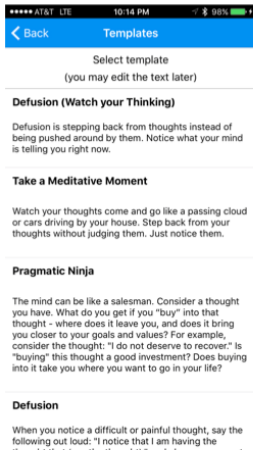
Identify one measurable thing that you can do today that leads you closer to what you value. Today I commit to calling a friend or loved one, which is in line with my value of being a person who reaches out to connect with other people they care about.

Dig where the Ground is Soft

You may not notice right away, but making one small change to your daily routine can have big results in the long term. Instead of picking your trickiest area, pick the issue that you can most easily visualize improving on.

Flexible Mind VARIES

Use Flexible Mind VARIES to try out new opportunities to relax, play, and be non-productive. Remember,



G. Communication with guided self-help participants

1. Notification of selection to guided self-help treatment

Thank you for completing our initial survey about women's mental health. You have been selected randomly to participate in a free program for people who want help with binge eating. In the mail you will receive a book called *Overcoming Binge Eating* by Christopher Fairburn. This book discusses what binge eating is, helps you figure out if you have it, and tells you how you can treat it. According to scientific studies, it has helped significant numbers of people.

When you receive *Overcoming Binge Eating*, please begin reading it and trying to follow its instructions. Every week for the next eight weeks, you will receive an email or text message from us with additional support. We want to spend the next eight weeks helping you get off to a strong start. However, most people follow the program on their own for several weeks longer.

A copy of the consent form you signed agreeing to participate in this study is attached to this message for your review.

Thank you very much for your participation!

womensmentalhealthvandy@gmail.com

615.392.0837

<https://www.facebook.com/womensmentalhealthvandy>.

2. Amazon mssg with book

This book is the basis for the binge eating program about which you recently received an email or text message. Please start reading! We will continue to contact you via email or text.

3. Week 0

By now you should have received *Overcoming Binge Eating* in the mail. The first part of the book discusses what binge eating is and what researchers have learned about it. The second part of the book tells you how you can treat your binge eating. According to scientific studies, the program in this book has helped significant numbers of people.

We hope you have had a chance to start reading this book. Try to follow its instructions. Every week for at least the next eight weeks, you will receive an email or text message from us with additional support.

As you will read in *Overcoming Binge Eating*, you will need to keep track of what you eat and what you are feeling and doing while eating. You can write down this information with pen and paper using the forms provided in the book (and attached to this email). However, for this study, you may keep track of this information through the free Recovery Record app on your phone or tablet, which may be easier. The Recovery Record app also provides online peer support.

If you have an iPhone or Apple device, click here to download the Recovery Record app from the iTunes store:

<https://itunes.apple.com/us/app/recovery-record-eating-disorder/id457360959?mt=8>

If you have an Android or Google device, click here to download the Recovery Record app from the Google play store:

<https://play.google.com/store/apps/details?id=com.recoveryrecord>

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

Thank you!

4. Week 1

Greetings!

Just checking in to make sure you've gotten off to a good start. You probably have had a chance to start reading *Overcoming Binge Eating*. You even may have had a chance to start following the program. Absolutely no worries if you haven't gotten started yet – with this program, everyone can move at her own pace!

The Steps

Step 1 involves self-monitoring and weighing yourself once and only once per week. Self-monitoring means immediately writing down what you ate, what was going on while you ate, and how you felt while you ate. You can use pen and paper or you can use the Recovery Record app for your self-monitoring.

- Link to Recovery Record app in the iTunes store:
<https://itunes.apple.com/us/app/recovery-record-eating-disorder/id457360959?mt=8>
- Link to Recovery Record app in the Google play store:
<https://play.google.com/store/apps/details?id=com.recoveryrecord>
- Forms for keeping track of this information also are provided in the book and attached to this email.

The Review

In this program you review your progress twice per week. Review sessions involve:

- rereading the step of the program you are working on
- asking yourself some questions
- completing the summary sheet during your second review session of the week

Step 1 review session instructions begin on page 141 of the book. Step 1 review involves asking yourself:

- Have I been monitoring?
- Can I improve my monitoring?
- Am I weighing myself once a week?
- Are any patterns becoming evident?

Instructions for completing the weekly summary sheet begin on page 144 of the book. A summary sheet is attached to this email.

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615.392.0837 or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

5. Week 2

Greetings!

By now you probably are becoming used to monitoring your food intake and weighing yourself only once per week. You may be ready to move on to Step 2 of the program, which involves establishing a pattern of regular eating.

If you're not ready for Step 2, that's completely fine. Stay on Step 1 as long as you need to. Turn to page 142 to help you figure out if you are ready to move on to Step 2. Each step of this program builds on the previous step, so it's important to move at your own pace. It's not too late to start or to get back on track if you've stopped for a while!

The Steps

Step 2 involves establishing a pattern of regular eating. This means eating three meals and two to three snacks per day. You should plan your meals and snacks ahead of time. You really want to avoid skipping meals or snacks and eating in between them. Eating regularly may be really different from what you're used to. It may take several tries to eat regularly for one whole day. You may be bingeing while you try to eat regularly. If so, don't wait until the next day to get back on track. Get back on track with the next meal or snack.

The Review

You want to make sure that you're reviewing your progress twice per week. Remember that review sessions involve rereading the step you're on, asking yourself the review questions, and completing the weekly summary sheet during your second review session. Review session instructions for Step 2 begin on page 156 of the book. Because this program is cumulative, you will ask yourself new Step 2 questions about regular eating in addition to the Step 1 questions about self-monitoring.

Step 1 review questions

- Have I been monitoring?
- Can I improve my monitoring?
- Am I weighing myself once a week?
- Are any patterns becoming evident?

Step 2 review questions

- Am I planning regular meals and snacks?
- Am I trying to restrict my eating to the day's planned meals and snacks?

- Am I skipping any of the meals and snacks?
- Are the gaps between my meals and snacks longer than 4 hours?
- Am I eating between my meals and snacks?
- Am I getting back on track when things go wrong?
- Am I adjusting the timing of my meals and snacks to accommodate events and circumstances?
- If applicable, am I following the advice regarding vomiting and misuse of laxatives and diuretics?

A copy of the summary sheet provided in the book is attached to this message and instructions for completing it begin on page 144 of the book.

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

6. Week 3

Greetings!

The Steps

By now you probably have begun experimenting with Step 2 – eating three planned meals and two to three planned snacks each day. Remember to plan your meals and snacks ahead of time, avoid skipping meals or snacks or eating in between them, and get back on track with the next planned meal or snack, rather than waiting until tomorrow.

It takes most people a few weeks to get the hang of regular eating, although you don't have to perfect this step in order to move on to Step 3. Turn to page 158 to figure out whether or not you are ready to move on to Step 3. Move at your own pace and remember that it's never too late to start the program if you haven't already or if you've stopped for a while.

The Review

Remember to review your progress twice per week. The Step 2 review process begins on page 156 and includes rereading Step 2, asking yourself review questions from Steps 1 and 2, and completing the weekly summary sheet.

Step 1 review questions

- Have I been monitoring?
- Can I improve my monitoring?
- Am I weighing myself once a week?
- Are any patterns becoming evident?

Step 2 review questions

- Am I planning regular meals and snacks?
- Am I trying to restrict my eating to the day's planned meals and snacks?

- Am I skipping any of the meals and snacks?
- Are the gaps between my meals and snacks longer than 4 hours?
- Am I eating between my meals and snacks?
- Am I getting back on track when things go wrong?
- Am I adjusting the timing of my meals and snacks to accommodate events and circumstances?
- If applicable, am I following the advice regarding vomiting and misuse of laxatives and diuretics?

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You can do it!

7. Week 4

Greetings!

By now you probably are getting the hang of self-monitoring and are becoming more comfortable with regular meals and snacks. Take a look at page 158 of the book to help you figure out if you're ready to move on to Step 3.

The Steps

Step 3 involves practicing alternatives to binge eating. The book lists some alternatives to binge eating and helps you come up with your own list of alternatives and distractions. You are going to practice using these alternatives when the urge to binge arises.

Step 3 also involves assessing what is happening to your weight. The idea is simply to become aware of weight changes since you began the program. Because this is not a weight loss program, most people will continue to weigh the same overall, despite some normal fluctuations. However, if you are now underweight, you should call your doctor.

As always you will continue practicing what you've learned in Steps 1 and 2.

The Review

The Step 3 review process begins on page 163. It involves studying your monitoring records and asking yourself the Step 3 review questions, plus the review questions from Steps 1 and 2. Additionally, during the second review session each week, you should complete the summary sheet.

Step 3 review questions

- Have I devised a list of alternative activities?
- Am I recording urges to eat or vomit?
- Am I using my list of alternative activities when needed?
- Could my use of alternative activities be improved?

Step 1 review questions

- Have I been monitoring?
- Can I improve my monitoring?
- Am I weighing myself once a week?
- Are any patterns becoming evident?

Step 2 review questions

- Am I planning regular meals and snacks?
- Am I trying to restrict my eating to the day's planned meals and snacks?
- Am I skipping any of the meals and snacks?
- Are the gaps between my meals and snacks longer than 4 hours?
- Am I eating between my meals and snacks?
- Am I getting back on track when things go wrong?
- Am I adjusting the timing of my meals and snacks to accommodate events and circumstances?
- If applicable, am I following the advice regarding vomiting and misuse of laxatives and diuretics?

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

8. Week 5

Greetings!

By now you probably have had an opportunity to practice alternatives to binge eating. Sometimes you may have been able to avoid or delay bingeing by using an alternative. This step can be challenging and definitely takes a lot of practice.

Take a look at page 164 to help you figure out if you're ready to move on to Step 4. If you are practicing alternatives nearly every time you have an urge to binge and having some success in doing so, it may be time to move on Step 5. Remember to move at your own pace and that it's never too late to start the program if you haven't already or if you've stopped for a while.

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

9. Week 6

Greetings!

By now you probably have gotten several chances to try out alternatives to binge eating. You may have had some success. Eating regular meals and snacks may have become easier. If you feel ready to work on some additional issues that may be affecting your binge eating (see page 164), you may be ready to move on to Step 4.

Remember to move at your own pace and that it's never too late to start the program if you haven't already or if you've stopped for a while.

The Steps

Step 4 focuses on problem solving, which is important to help you deal with situations that trigger your binge eating. For many people, unpleasant events and circumstances lead to episodes of binge eating. Problem solving teaches how to handle those unpleasant circumstances through means other than bingeing. It's also a generally helpful life skill. As laid out on page 169, there are six steps in the problem-solving method recommended in this program. As you begin practicing problem-solving, you will continue all of the previous steps.

The Review

Continue review sessions twice per week. Step 4 review session questions begin on page 176. During the second review session each week, complete the summary sheet in addition to the Step 4 review session questions.

Step 4 review questions

- Am I problem-solving frequently enough?
- When I am problem solving, am I doing it properly?
- Am I reviewing my problem-solving?

Step 3 review questions

- Have I devised a list of alternative activities?
- Am I recording urges to eat or vomit?
- Am I using my list of alternative activities when needed?
- Could my use of alternative activities be improved?

Step 1 review questions

- Have I been monitoring?
- Can I improve my monitoring?
- Am I weighing myself once a week?
- Are any patterns becoming evident?

Step 2 review questions

- Am I planning regular meals and snacks?
- Am I trying to restrict my eating to the day's planned meals and snacks?
- Am I skipping any of the meals and snacks?
- Are the gaps between my meals and snacks longer than 4 hours?
- Am I eating between my meals and snacks?
- Am I getting back on track when things go wrong?

- Am I adjusting the timing of my meals and snacks to accommodate events and circumstances?
- If applicable, am I following the advice regarding vomiting and misuse of laxatives and diuretics?

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

10. Week 7

Greetings!

Hopefully you have had an opportunity to practice your new problem-solving skills. It may be time to move on to Step 5, which involves reviewing how the program is working for you so far. Perhaps things are going well and your binge eating has decreased. Perhaps you want to renew your efforts to follow the program more closely. Perhaps you have some additional challenges like dieting or body image concerns that need to be addressed at this point. Read Step 5 to help you figure out how to proceed at this point.

Remember to move at your own pace and that it's never too late to start or re-start. If you have not started the program or are on an earlier step, please let us know so that we can send messages relevant to your progress.

If you have treatment questions, you can send them to us via email at womensmentalhealthvandy@gmail.com, via text at 615-392-0837, or via Facebook at <https://www.facebook.com/womensmentalhealthvandy>. While we will attempt to respond as quickly as possible, please allow up to 72 hours for a response. Contact your doctor or 911 with any urgent physical or emotional problems.

You can do it!

11. Week 8

Greetings!

At this point, you probably have read Step 5 and come to a decision about how you want to proceed. Taking stock of your progress typically does not mean that it is time to end the program. Most people follow this program for four to six months. But it may be time to change up what you're doing.

- If you have enjoyed some success in reducing your binges, you may want to move to the last Step, Ending Well, which discusses how to maintain your progress and deal with setbacks.

- If you think that you could benefit from following the program more closely, it might be time to refocus your efforts on Steps 1-4.
- If dieting or body image is a big problem for you, it probably is time to read the optional Steps of the program that deal with those specific issues.
- If you feel like things are not going well, despite your best efforts, you probably should read the book's appendix on Tackling Other Problems and decide whether you want to seek out help from a mental health professional.

Since you now own the *Overcoming Binge Eating* treatment manual, you have the tools you need to address your binge eating at your own pace. We hope the last couple of months have helped to start that process.

The link below will take you to that short follow-up survey we mentioned at the beginning of the study. You will receive a \$15 check or gift card for completing it.

<https://redcap.vanderbilt.edu/surveys/?s=JCK4DW4KHL>

Thank you very much!!!

I. Follow-up survey

Confidential Page 2 of 9
Women's Mental Health II: Follow-up survey protocol

Please answer the questions below. Thank you!

The consent form you signed in the initial survey applies to this follow-up survey as well. You can download or print a copy of the consent form here.

(Attachment: "Consent part 2 - study participation - 2015-04-09.pdf")

Please enter the email address or phone number where you received the link to this survey, for verification purposes. _____

How many pounds do you weigh? _____

Please enter your height in feet and inches. (For example, if you are 5 feet 7 inches, you would enter 5 in the first box and 7 in the second box.)

feet _____

inches _____

BMI (You don't need to enter anything here. This number is calculated automatically from your height and weight.) _____

Date of Approval: 6/7/2015



07/29/2015 8:11pm

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The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully.

On how many of the past 28 days . . .

Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite desire to have a totally flat stomach?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Have you had a definite fear of losing control over eating?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a definite fear that you might gain weight?	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
Have you felt fat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you had a strong desire to lose weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)? _____ (number of times)

On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)? _____ (number of times)

Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)? _____ (number of days)

During these eating episodes, have you typically...

...eaten much more rapidly than normal? Yes No

...eaten until you felt uncomfortably full? Yes No

...eaten large amounts of food when you haven't felt physically hungry? Yes No

...eat alone because you have felt embarrassed about how much you were eating? Yes No

...felt disgusted with yourself, depressed, or very guilty? Yes No

In general, over the past three months how distressed or upset have you felt about these episodes? A lot A little

Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight? _____

Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight? _____

Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories? _____

Over the past 28 days, on how many days have you eaten in secret (i.e., furtively)? (Do not count episodes of binge eating) No days 1-5 days 6-12 days 13-15 days 16-22 days 23-27 days Every day

On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? Do not count episodes of binge eating. None of the times A few of the times Less than half Half of the times More than half Most of the time Every time

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Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating

- Not at all
Slightly
Moderately
Markedly

Over the past 28 days . . .

Has your weight influenced how you think about (judge) yourself as a person?
Has your shape influenced how you think about (judge) yourself as a person?
How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?
How dissatisfied have you been with your weight?
How dissatisfied have you been with your shape?
How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?
How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?
Over the past three-to-four months have you missed any menstrual periods?
If so, how many?
Have you been taking birth control?

Date of Approval: 8/7/2015

01/29/2015 8:11pm



Date of Approval: 8/7/2015

01/29/2015 8:11pm



Treatment Acceptability & Feasibility

Did you receive a book entitled Overcoming Binge Eating or a link to download a mobile app called Recovery Record, as part of the treatment portion of this study?

- Yes
No

Did you read some or part of the book, Overcoming Binge Eating, that was mailed to you?

- Yes
No

Why didn't you read the book? (Check all that apply.)

- Lack of time
Did not think book would be helpful
Book was difficult to read
Other reasons

What else prevented you from reading the book?

For how many weeks did you follow the program in the book, Overcoming Binge Eating?

- not at all
1 day to 1 week
2 weeks
3 weeks
4 weeks
5 weeks
7 weeks
8 or more weeks

Why didn't you follow the program outlined in the book for longer? (Check all that apply.)

- Lack of time
Did not think program would be helpful
Program was difficult to follow
followed the program long enough to improve my eating
Other reasons

Why was the program difficult to follow? What other reasons prevented you from following it?

How comfortable were you with using the book, Overcoming Binge Eating, for your eating problem?

Not Comfortable ----- Very Comfortable
(Place a mark on the scale above)

For how many weeks did you use the Recovery Record app?

- not at all
1 day to 1 week
2 weeks
3 weeks
4 weeks
5 weeks
7 weeks
8 or more weeks

Why didn't you use the app for longer? (Check all that apply.)

- Lack of time
Did not think app would be helpful
App was difficult to use
used the app long enough to improve my eating
Other reasons

Why was the app difficult to use? What else prevented you from using the app for longer? How comfortable were you with using the app, Recovery Record, for your eating problem?

0% = Not Comfortable ----- 100% = Very Comfortable

Date of Approval: 8/7/2015

01/29/2015 8:11pm



How helpful did you find the messages from the treatment team?

0% = Not Comfortable ----- 100% = Very Comfortable
(Place a mark on the scale above)

What did you LIKE about the book, app, or messages from the treatment team?

What did you DISlike about the book, app, or messages from the treatment team? What else made it hard for you to participate?

Apart from this study, have you used any medications, diets, or other programs to influence your eating habits or weight over the last eight weeks?

- Yes
No

Which medications, diets, or other programs did you use?

Date of Approval: 8/7/2015

01/29/2015 8:11pm



Contact Information

In order to receive a \$15 check or gift card for completing this part of the study, you must provide your name and mailing address. Please double-check your address.

First name _____

Last name _____

Mailing address _____

May we contact you about future opportunities to participate in research in this area? Yes No

Thank you very much for participating in this study! You have provided us with invaluable information about how to help people with eating problems. You will receive a \$15 check or gift card very soon.

Here are some resources for learning more about eating problems:

Academy for Eating Disorders
<http://aedweb.org/web/index.php/education/eating-disorder-information/eating-disorder-information-2>

National Eating Disorder Association
<http://www.nationaleatingdisorders.org/general-information>

Eating Disorder Coalition of Tennessee
http://www.edct.net/find_help/

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