FEASIBILITY AND ACCEPTABILITY OF A BODY KINDNESS GUIDED SELF-HELP INTERVENTION FOR EMERGING ADULT WOMEN

by

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A dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in
Health Psychology

Charlotte

2020

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ABSTRACT

COURTNEY B. ROGERS. Feasibility and acceptability of a Body Kindness guided self-help intervention for emerging adult women. (Under the direction of DR. JENNIFER B. WEBB)

Based on the extant literature, new and innovative strategies for preventing the development of disordered eating in emerging adulthood appear to be an important area of future focus. This study examined the effects of a GSH intervention for the prevention of disordered eating via addressing both risk factors and protective factors in a population that is at increased risk for disordered eating. Results indicated a high level of engagement and satisfaction with the intervention. Proof of concept was preliminarily supported by the observed significant changes in all variables of interest across the intervention. Overall, results of this study suggest that the use of a GSH program which seeks to reduce risk factors for EDs while also supporting current wellbeing and adaptive functioning may be indicated for emerging adult women. Although interpretation of results is limited by factors such as a small sample size and lack of randomization, the study provides the groundwork for continued intervention development and investigations (e.g., randomized controlled trials) supporting efficacious, feasible strategies for addressing a significant concern in a crucial period of life.

DEDICATION

This dissertation is dedicated first to my husband, Bret. This path would have been much more difficult without your unwavering support over the past decade. I am so thankful for you and how we have grown together during this time. I would also like to dedicate this dissertation to my family, especially my parents and my brother. You never fail to provide me with encouragement and humor, both of which have been essential in my pursuit of higher education. None of this would be possible without all of you.

ACKNOWLEDGEMENTS

The completion of this project would have been impossible without the help of many people. First, I would like to acknowledge my mentor, Dr. Jennifer Webb. Over the past four years, she has provided excellent guidance in a warm and encouraging manner. I am so grateful for her approach to mentorship and ability to meet me wherever I have developmentally needed during this process. I would also like to thank my committee members, Drs. Montanaro, Quinlan, and Johnson, for their time and efforts during the past year. This dissertation project has been bookended by extraordinary events (in the forms of the shooting that took place on our campus in April 2019 and the ongoing COVID-19 health crisis), and each of these individual's flexibility and support in helping me to reach this milestone in the midst of this time has been admirable. Next, I would like to acknowledge Dr. Erin V. Thomas. She provided significant guidance regarding the qualitative portions of this study, and I am grateful for her expertise and friendship. Several research assistants (Lia Bauert, Jordan Carelock, Gretel Maya Farfan, and Emorie Worthington) also contributed to this project in meaningful ways by assisting with recruitment, serving as support personnel, and administering pre- and post-intervention sessions. Finally, I would like to acknowledge the Graduate School for providing funding (i.e., the Thomas L. Reynolds Graduate Student Research Award and the Graduate School Summer Fellowship) that made completion of this dissertation possible.

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LIST OF ABBREVIATIONS

ACT	Acceptance and Commitment Therapy
AIM	Acceptability of Intervention Measure
AMWESR	Attunement Model of Wellness and Embodied Self-Regulation
ASQ	Ask Suicide-Screening Questions
BAS-2	Body Appreciation Scale, second edition
BI-AAQ	Body Image Acceptance and Action Questionnaire
BMI	Body Mass Index
BSQ	Body Shape Questionnaire
CBT	Cognitive Behavioral Therapy
EDE-Q	Eating Disorder Examination-Questionnaire
FIM	Feasibility of Intervention Measure
GSH	Guided self-help
IES-2	Intuitive Eating Scale-2
MSCS	Mindful Self-Care Scale
PBE	Physical Body Experiences Questionnaire
SCS-SF	Self-Compassion Scale-Short Form
SPSS	Statistical Package for the Social Sciences
WBIS-M	Weight Bias Internalization Scale-Modified

CHAPTER 1: BRIEF INTRODUCTION

Overview and Scope

Eating disorders represent a significant burden on the wellbeing of individuals living in industrialized societies. These disorders are associated with adverse psychological and physiological distress for afflicted individuals (e.g., Coric & Murstein, 1993; Grucza, Pryzbek, & Cloninger, 2007; Herzog, Dorer, & Keel, 1999). Moreover, they are also costly from a financial perspective for both those afflicted as well as for society as a whole (Striegel Weissman & Rosselli, 2017). A subclinical presentation of disordered eating (e.g., inappropriate food restriction, binge eating) is associated with a similar amount of functional impairment and distress as its diagnosable counterpart with an increased prevalence rate (Fitzgibbon, Sanchez-Johnsen, & Martinovich, 2003). Presence of subclinical disordered eating also increases the risk for later development of full clinical presentation (Striegel-Moore & Bulik, 2007).

Due to the significant negative consequences associated with disordered eating, its treatment and prevention of its development are areas of significant interest (Neumark-Sztainer et al., 2006). From a developmental lens, understanding factors such as the typical timeline, risk factors, and protective factors for onset are crucial in designing prevention efforts (O'Connell, Boat, & Warner, 2009). Regarding course of development, individuals in the "emerging adulthood" period of life (i.e., ages 18-25; Arnett, 2000, 2007) are likely at elevated risk for engagement in disordered eating behaviors (White, 2011); furthermore, this is especially true if they identify as female (Striegel-Moore et al., 2009). In addition to age and gender, other risk factors for the development of disordered eating include body dissatisfaction, higher weight status, thin

ideal and weight bias internalization, and a history of dieting (Striegel-Moore & Bulik, 2007).

In addition to identifying and addressing risk factors, emerging literature is also encouraging the promotion of protective factors against disordered eating; furthermore, much of this work is focused on positive body image and embodiment (Halliwell, 2015; Levine & Smolak, 2016; Piran, 2015; Smith-Jackson, Reel, & Thackeray, 2014; Stice, Shaw, & Marti, 2007; Webb, Wood-Barcalow, & Tylka, 2015). Positive body image is multi-faceted and is conceptualized as consisting of components such as appreciation of the body, responsiveness to the body's needs, and having the ability to effectively navigate threats to body image (Frisen & Holmqvist, 2010; Menzel & Levine, 2011; Tylka & Wood-Barcalow, 2015a; Webb et al., 2015; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). *Embodiment* refers to a sense of ownership over, connection with, and care for one's own body. Furthermore, in embodiment, the body is viewed as a vehicle through which one fully interacts with the world competently and powerfully (Menzel & Levine, 2011; Piran, 2002, 2015, 2016).

The enactment of embodying activities is crucial for the development of positive body image (Menzel & Levine, 2011). One way that individuals can participate in these behaviors is through awareness of and responsiveness to the needs of their body (Piran, 2002, 2015, 2016, 2017). As a result, researchers and clinicians have been encouraged to focus their efforts on promoting mindful self-care as a means for preventing and treating disordered eating (Cook-Cottone, 2015). Although mindful self-care is not an aspect of positive body image itself, this practice may provide an avenue through which positive embodiment is supported and development of positive body image can occur (Cook-

Cottone, 2015; Wood-Barcalow et al., 2010). Mindful self-care involves a range of behaviors such as engaging in regular physical activity, consuming nutritious foods, being self-compassionate, and having supportive relationships (Cook-Cottone & Guyker, 2018). Aligned with the Attunement Model of Wellness and Embodied Self-Regulation (AMWESR; see Appendix A; Cook-Cottone, 2006, 2015a, 2015b; Cook-Cottone, Tribole, & Tylka, 2013) mindful self-care can support positive body image by serving as a means for balancing and maintaining both internal (thoughts, feelings, and physical body) and external (family, community, and culture) demands and influences on the self.

In designing appropriate interventions with high utility for impacting risk and protective factors, issues of feasibility and acceptability should be considered (Onken, Carroll, Shoham, Cuthbert, & Riddle, 2014). Although several prevention programs for eating disorders exist for the emerging adult population and have been demonstrated as efficacious, there are concerns about ongoing availability and the sustainability of these efforts (National Eating Disorder Association, 2013; Rohde, Shaw, Butryn, & Stice, 2015). Moreover, for this population, there are also other perceived barriers to treatment to consider such as financial limitations and time constraints (Becker et al., 2017; Hunt & Eisenberg, 2010). As a result, there is a need to utilize innovative intervention designs that are both acceptable by this population and have the potential to be efficacious.

One response to the limitations of traditional intervention approaches has been the use of guided self-help intervention (GSH), which involves the provision of materials to individuals that can be applied independently with minimal guidance from a clinician. GSH has been utilized to treat a variety of mental health concerns (e.g., anxiety, depression, stress; Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Day, Mcgrath,

& Wojtowicz, 2013) as well as eating disorders (Banasiak, Paxton, & Hay, 2005; Carter & Fairburn, 1998; Saekow et al., 2015; Traviss, Heywood-Everett, & Hill, 2011). It appears to be uniquely suited to addressing subclinical, disordered eating (Traviss, Heywood-Everett, & Hill, 2013). The delivery style of GSH makes it more accessible than traditional treatment methods and college-aged individuals have rated these types of programs as acceptable (e.g., Saekow et al., 2015). Despite this significant advance in providing accessible, acceptable care, extant GSH programs are limited by factors such as paying primary attention to the reduction of risk factors (rather than promotion of protective factors, such as positive body image and positive embodiment). This continues to be the predominant approach despite support for the inclusion of protective factors as beneficial (Levine & Smolak, 2016; Stice, Shaw, & Marti, 2007).

This project considered these existing limitations in the design of a GSH intervention meant to address factors which increase the risk for disordered eating through the improvement of positive body image and enhancing current wellbeing. This mixed-methods study evaluated the feasibility and acceptability of a novel GSH intervention in a sample of college women with pre-existing body image dissatisfaction and/or low levels of body appreciation, a group that is at particular risk for disordered eating. This intervention utilized the book *Body Kindness* (Scritchfield, 2016), which incorporates elements of positive psychology and third-wave behavioral interventions to encourage improved body image via engagement in mindful self-care behaviors. The book is written from a weight-inclusive (as opposed to diet-focused) stance (Tylka et al., 2014). Prior to this study, the body kindness approach had not yet been evaluated in the context of the emerging adult population.

The intervention took place over eight weeks. During this time, participants were asked to complete pre-assigned book chapters and received weekly text messages via Google Voice from a trained support person. As part of testing feasibility and proof of concept of the intervention, preliminary evaluation of participant response to the intervention was completed. This included an evaluation of study retention, participation in text exchanges, and adherence to completing assigned exercises. In order to explore the initial efficacy of the intervention, changes in body image (body appreciation, body image flexibility, body dissatisfaction), eating behaviors (disordered and intuitive eating), mindful self-care, positive embodiment, self-compassion, and weight bias internalization were examined between pre- and post-intervention. Feasibility and acceptability were also assessed using a quantitative questionnaire to evaluate satisfaction with intervention components, as well as several open-ended questions to ascertain participant perceptions of the utility, strengths, and weaknesses of the program.

Significance

This study addresses existing gaps in the literature by exploring the use of a GSH program that incorporated a focus on both negative and positive facets of body image with a primary emphasis on mindful self-care. Addressing potential risk and protective factors via the encouragement of self-care behaviors using the *Body Kindness* book is a particularly novel approach in this realm. Furthermore, the use of GSH addresses typical barriers and limitations of prevention programs in the emerging adult population, which is susceptible to disordered eating.

The design of this project also establishes a foundation for future, related intervention efforts. The Stage Model for Behavioral Intervention Development (Onken

et al., 2014) proposes that intervention development should occur in six, iterative stages. Stage 0 focuses on basic science and takes place prior to intervention creation. Stage 1 involves the preliminary development and evaluation of the intervention. This can include work such as adaptation of existing studies, pilot studies, and feasibility testing. Stages 2 and 3 consist of efficacy testing (in research settings and "real world" settings), while Stage 4 advances to testing effectiveness. The final stage, Stage 5, focuses on the implementation and dissemination of the intervention. Use of a stage model, such as the one described by Onken and colleagues (2014), allows for the development of interventions that are highly impactful with significant utility. By testing feasibility and acceptability of a GSH intervention, this study occurred at the Stage 1 level. This helps to lay a solid groundwork for future intervention development and investigations (e.g., randomized controlled trials) supporting efficacious, feasible strategies for addressing a significant concern in a crucial period of life.

CHAPTER 2: LITERATURE REVIEW

Disordered eating is a maladaptive way of relating to food. It may be part of the presentation of a clinical eating disorder, as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (American Psychiatric Association, 2013), or it can stand-alone as a subclinical syndrome. These dysfunctional behaviors may present as consuming too much (e.g., binge eating) or too little (e.g., fasting) food or a combination of the two. It can also refer to other inappropriate eating-related compensatory behaviors such as purging and engaging in excessive exercise (Croll, Neumark-Sztainer, Story, & Ireland, 2002; Larson, Neumark-Sztainer, & Story, 2009; Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011).

Even when they do not reach the criteria for consideration as a full-blown clinical presentation, disordered eating behaviors still deserve attention. One reason for this is that subclinical eating disorder symptoms are associated with a similar amount of psychological distress as their diagnosable counterpart. There can also be a significant related level of functional impairment (e.g., behavioral avoidance, physical health implications; Fitzgibbon et al., 2003; Latner, Vallance, & Buckett, 2008). Furthermore, this eating style is also linked to other physiological concerns such as nutritional deficiency and its consequences (Bryla, 2003). In addition to being significantly distressing, the presence of disordered eating behaviors also increases risk for the development of clinical eating disorders (Bryla, 2003; Striegel-Moore & Bulik, 2007).

Risk Factors for Disordered Eating

Several risk factors have been consistently identified as increasing the chances for later development of disordered eating behaviors. These range from physiological to psychological in nature.

Gender. Women are significantly more likely to be diagnosed with an eating disorder than their male counterparts. This gender gap is largest in bulimia nervosa and anorexia nervosa (10:1 female to male ratio); however, in binge eating disorder, the discrepancy is less significant between genders (2:1 female to male ratio; American Psychiatric Association, 2013). This gender gap also appears to hold true with subclinical disordered eating behaviors: in a large-scale study of over five thousand male and female adults, women were significantly more likely to endorse symptoms such as perceived loss of control in eating, compensatory behaviors like vomiting or fasting, body checking, and body avoidance (Striegel-Moore et al., 2009).

It is likely that this gender difference is primarily due to factors such as higher sociocultural pressure on women to achieve and maintain a thin body type (Hsu, 1989; Striegel-Moore & Bulik, 2007). Internalization of societal standards of beauty (i.e., thin ideal internalization; Rodin, Silberstein, & Striegel-Moore, 1985; Thompson & Stice, 2001) is particularly pernicious (Cafri, Yamamiya, Brannick, & Thompson, 2005). In addition to taking ownership of the thin ideal, internalization typically also encourages attempts to change behavior in order to achieve this appearance standard (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Unsurprisingly, thin ideal internalization has been consistently identified as a causal factor in the development of disordered eating through increasing negative body image (Cafri et al., 2005; Stice, 2002).

Body image disturbance. Across the extant literature, one of the most well-established predictive factors for disordered eating behaviors is a negative body image. Body image disturbance can be described as a distorted perception of one's body appearance, weight, or shape (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). It is conceptualized as being comprised of multiple facets such as body shame, self-surveillance, self-objectification, and body image dissatisfaction. Among the facets of negative body image, body image dissatisfaction has been extensively studied. Body dissatisfaction is an evaluative component of body image (Cash & Szymanski, 1995; Thompson et al., 1999). Moreover, it has been noted as a crucial predictive risk factor for engagement in maladaptive eating behaviors and eating disorder development (Dakanalis et al., 2016; Kearney-Cook & Tieger, 2015; Levine & Smolak, 2006; Stice, 2002; Stice & Shaw, 2002). In addition to predicting dysfunctional eating behaviors, body dissatisfaction has also been linked to other negative outcomes such as depression (Paxton, Neumark-Sztainer, Hannan & Eisenberg, 2006; Stice, Hayward, Cameron, Killen, & Taylor, 2000; Stice & Shaw, 2002; Wiederman & Pryor, 2000).

Body mass index. Body Mass Index (BMI) is calculated by dividing an individual's height squared (in meters) by their weight (in kilograms) and is meant to serve as a means to categorize individuals based on their weight relative to others. A BMI of 18.5-24.9 is considered "normal"; furthermore, any number less than 18.5 is classified as "underweight," 25-29.9 is "overweight", and greater than 30 is labeled "obese" (Centers for Disease Control and Prevention, 2017). Research has demonstrated that a higher BMI places individuals at increased risk for body image dissatisfaction; for example, a systematic review and meta-analysis across fourteen studies by Weinberger,

Kersting, Riedel-Heller, and Luck-Sikorski (2017), found that higher weight women were significantly more likely to experience body dissatisfaction than their normal-weight peers.

Weight bias. One reason that BMI may place individuals at risk for body image dissatisfaction is related to weight bias and the internalization of these beliefs. Weight bias, or "social devaluation and denigration of people perceived to carry excess weight [leading] to prejudice, negative stereotyping, and discrimination" (Tomiyama, 2014, p. 8, is a common occurrence for individuals of a higher weight across numerous settings (e.g., occupational, health care, etc.; Puhl & Heuer, 2009). This also appears to be true for college-aged women: Herbozo, Menzel, and Thompson (2013) found that college women of higher weight were significantly more likely to receive negative appearance-related commentary as compared to their normal-weight and underweight peers.

Weight bias is particularly pernicious when the individual endorses personal belief in negative stereotypes regarding weight and evaluates their own self accordingly (i.e., internalized weight bias; Durso & Latner, 2008). Individuals with increased levels of internalization of weight bias are also more likely to have elevated body image concerns, disordered eating behaviors, and worse overall psychological functioning (e.g., Carels et al., 2013; Durso & Latner 2008). Furthermore, weight bias internalization (alongside psychological distress) was demonstrated to act as a mediator between exposure to weight stigma and disordered eating behaviors in a large sample of college students (O'Brien et al., 2016).

Disordered Eating Behaviors in Emerging Adulthood

The average age for onset of eating disorders ranges from adolescence to the mid-twenties (American Psychiatric Association, 2013). Historically, researchers have placed a greater focus on adolescence with concern to this emergence; however, researchers and clinicians have begun to recognize the value of focusing on the older end of this range given that a significant number of individuals will demonstrate eating disorder development between 18 and 25 years old (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). In addition to full-blown presentations of these disorders, there are also significant rates of subclinical disordered eating in this age range (Eisenberg, Nicklett, Roeder, & Kirz, 2011).

This stage of life between 18 and 25 years, deemed "emerging adulthood" by Arnett (2000, 2007), has received increasing attention in the literature over the past several decades due to the critical nature of the time in the lives of those living in industrialized societies. This stage of life represents a transitional, but distinct, period between the more traditional stages of adolescence and adulthood. For instance, there may be a transition from living at home with parents and attending secondary school, to living independently and joining the workforce and/or attending college. According to Arnett, emerging adulthood has five features: the exploration of identity, presence of possibilities, instability, focus on the self, and feeling in-between childhood and adulthood. For instance, during this time individuals are more likely to be developing their identity regarding life values, romance, family building, geographic location, and career.

The increased level of instability during the period of emerging adulthood presents an increase in risk for a variety of disordered behavior (e.g., substance abuse, risky sexual behavior), including body image and eating concerns. As individuals begin to make more independent decisions and form opinions about the world around them and their own self, this includes attitudes regarding their body shape, overall appearance, and eating behaviors (e.g., Nelson et al., 2008). The level of identity instability during this time period, coupled with appearance expectations and the knowledge that body size can be influenced behaviorally (via dieting, exercise, etc.), may contribute to a greater risk for disordered eating development for emerging adults, especially women (Gonidakis, Lemonoudi, Charila, & Varsou, 2018).

Among college women, prevalence rates of body image concerns and disordered eating behaviors are considerable. The experience of body dissatisfaction has become so common that it has also been referred to as "normative discontent" (Rodin et al., 1985). A study examining this phenomenon in college women by Rodgers, Sales, and Chabrol (2010) found a majority of the participants endorsed dissatisfaction with their current body, with over 80% describing their ideal weight as lower than their current weight. Moreover, perceived pressure from the media significantly predicted these body image concerns.

Regarding disordered eating among this group, overeating and binge eating are particularly important to consider. Studies of these phenomena in samples of non-clinical college women find that between 20% and 40% of the sample regularly engaged in either overeating or binge eating (Berg, Frazier, & Sherr, 2009; Goldschmidt, Wall, Zhang, Loth, & Neumark-Sztainer, 2016; Lloyd-Richardson, Bailey, Fava, & Wing, 2009;

Mailloux, Bergeron, Meilleur, D'Antono, & Dube, 2014; Racette, Deusinger, Strube, Highstein, & Deusinger, 2005). In addition to excessive food intake, there is also an increased prevalence of food restriction (especially via dieting) among this population. A 2012 study by Fayet, Petocz, and Samman found that 43% of their sample ($N = 308$) endorsed ongoing dieting behaviors. The high rates of dieting by women in emerging adulthood is particularly concerning given the likelihood that this unnatural pattern of eating (via focus on external indicators of consumption, such as a calorie count) can contribute to becoming misattuned to the body's natural hunger and satiety signals, increasing the risk for maladaptive behaviors (Lowe & Levine, 2005).

Given that rates of body dissatisfaction and disordered eating in this population are substantial, and the natural processes of emerging adulthood represent one major risk factor for disordered eating development, this appears to be an important time period to intervene. The developmental processes present in emerging adult period *also* make it especially ripe for intervention efforts (Arnett, 2000; Oesterle, 2013; Schwartz, 2016). As a result, many researchers have designed interventions targeting risk factors for disordered eating in this age group.

Moving Toward Understanding Protective Factors

In addition to addressing risk factors such as the negative aspects of body image, more recent scholarship has begun to suggest that promotion of protective factors should be considered in preventative efforts (Levine & Smolak, 2016; Piran, 2015). Protective factors can be described as constructs which have been demonstrated to reduce the risk for a given condition, either by interfering with the risk factor process or reducing the presence of the risk factor (Levine & Smolak, 2016). In particular, positive body image

and embodiment have been identified as holding significant promise as protective factors from disordered eating (e.g., Halliwell, 2015; Levine & Smolak, 2016; Piran, 2015; Smith-Jackson et al., 2014; Stice, Shaw, & Marti, 2007; Webb, Wood-Barcalow, & Tylka, 2015). In addition to positive body image, self-compassion has also been investigated as a protective factor in this realm (e.g., Breines, Toole, Tu, & Chen, 2014; Wasylkiw, MacKinnon, & MacLellan, 2012; Webb & Forman, 2013).

Positive body image and embodiment. Positive body image is a multi-faceted construct which includes elements such as appreciating the body and its functionality, being attuned and responsive to the body's needs, and having the ability to effectively navigate potential threats to the body image with self-compassion (Frisen & Holmqvist, 2010; Menzel & Levine, 2011; Tylka & Wood-Barcalow, 2015a; Webb et al., 2015; Wood-Barcalow et al., 2010). Positive body image can be described as a form of positive embodiment, which is a sense of ownership over, connection with, and care for one's body. Positive embodiment also encompasses a sense of freedom (mentally and physically) to engage with the world in a competent manner (Menzel & Levine, 2011; Piran, 2002, 2015, 2016).

Halliwell (2015) identified three potential pathways by which positive body image may protect individuals from negative outcomes: leading to direct improvement in adaptive behaviors (e.g., intuitive eating) and wellbeing, encouraging active avoidance of potentially harmful influences, and enhancing ability to navigate potentially harmful messages and external influences when encountered (e.g., through affect regulation; Webb, Butler-Ajibade, & Robinson, 2014). Two facets of positive body image which

have garnered a significant amount of support for their potential role in this process include body appreciation and body image flexibility.

Body appreciation. Body appreciation, a facet of positive body image, is defined as "holding favorable attitudes of the body (regardless of actual physical appearance); acceptance of the body in spite of weight, body shape, or imperfections; respect[ing] the body by attending to its needs and engaging in healthy behaviors; and protection of the body by rejecting unrealistic body images portrayed in the media" (Avalos, Tylka, & Wood Barcalow, 2005, p. 286). It has been positively associated with psychological wellbeing such as positive affect, body esteem, intuitive eating, and self-compassion (Augustus-Horvath & Tylka, 2011; Avalos et al, 2005; Avalos & Tylka, 2006; Tylka & Kroon Van Diest, 2013; Tylka & Wood-Barcalow, 2015; Wasylkiw et al., 2012). Body appreciation is also negatively linked with body disturbances, body surveillance, disordered eating behaviors, and thin ideal internalization (Avalos et al., 2005; Tylka, 2013; Tylka & Kroon Van Diest, 2013; Webb, 2015).

Body appreciation likely serves as a protective factor against the development of disordered eating (Smolak, 2012; Tylka, 2011). One way this may occur is by providing a buffer between individuals and body image-related threats in the environment. For example, in an experimental study by Andrew, Tiggemann, and Clark (2015), an individual's level of body appreciation appeared to protect participants from the negative consequences of viewing media images of idealistically thin body types. This replicated similar findings by Halliwell (2013).

Body image flexibility. Borne out of the tradition of Contextual Behavioral Science, body image flexibility represents an adaptive strategy for responding to

potentially distressing present-moment experiences of the body. Furthermore, it is an individual's ability to embrace any thoughts, emotions, physical sensations, etc. of their body in an open and non-judgmental manner (Sandoz, Wilson, Merwin, & Kellum, 2013). Body image flexibility can be considered a specialized type of psychological flexibility, which is the primary treatment target of Acceptance and Commitment Therapy (ACT; Hayes, 2004; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). From an affect regulation perspective (Cash, 2011; Webb et al., 2014), body image flexibility likely serves as a protective factor due to its value in facilitating flexible and adaptive responding in the face of appearance-related threats and resulting distress.

High levels of body image flexibility are associated with decreased eating disorder risk and body dissatisfaction, adaptive eating behaviors (e.g., intuitive eating), body appreciation, and less internalized weight bias (Duarte, Pinto-Gouveia, & Mendes, 2016; Ferreira, Pinto-Gouveia, & Duarte, 2011; Sandoz et al. 2013; Webb & Hardin, 2016). In a recent review of the body image flexibility literature, Rogers, Webb, and Jafari (2018) found that this construct frequently serves as an explanatory variable in the relationship between body image and eating behaviors. Moreover, as a result, a growing body of literature suggests that body image flexibility has significant utility in intervention approaches. In addition to appearing amenable to change through intervention, changes in body image flexibility has been demonstrated to largely account for symptom improvements in treatments targeting disordered eating symptomatology (e.g., Pellizer, Waller, & Wade, 2018). This suggests that body image flexibility is a noteworthy target for future intervention efforts.

Self-compassion. Self-compassion is another construct which has been inversely associated with disordered eating behaviors (e.g., Breines et al., 2014; Wasylkiw et al., 2012; Webb & Forman, 2013). Self-compassion (Neff 2003a, 2003b) is comprised of three components: mindfulness (being open and non-judgmental of one's present-moment experience), self-kindness (being kind to oneself during these experiences), and common humanity (recognizing that suffering is a shared experience with other humans). Self-compassion may serve as a protective factor against disordered eating in numerous ways. First, it may function by directly supporting positive body image and wellbeing (Braun, Park, & Gorin, 2016). Studies have linked self-compassion to adaptive eating behaviors, body appreciation, body image flexibility, and unconditional self-acceptance (Albertson, Neff, & Dill-Shackleford, 2015; Homan & Tylka, 2015; Kelly, Vimalakanthan, & Miller, 2014; Schoenefeld & Webb, 2013; Siegel, Huellemann, Hillier, & Campbell, 2020; Webb & Forman, 2013; Webb & Hardin, 2016).

Self-compassion may also be beneficial by supporting affect regulation in response to potential body image threats (Braun et al., 2016). For instance, it has been demonstrated to moderate the relationship between sociocultural pressures to maintain an appearance ideal and internalization of these messages (Tylka, Russell, & Neal, 2015). Kelly and colleagues (2014) found that self-compassion moderated the relationship between BMI and disordered eating behaviors (such that, when self-compassion was high, there was no relationship between these constructs). Daye, Webb, and Jafari (2014) also demonstrated the protective role of self-compassion by demonstrating that individuals with higher levels of self-compassion experienced weaker effects on body image when recalling critical caregiver eating messages.

Existing Intervention Efforts

To date, there are several prevention programs which have been demonstrated through clinical trials to reduce later disordered eating development in emerging adults. Effective programs tend to incorporate several common factors. First, programs target eating disorder risk factors (Ciao, Loth, & Neumark-Sztainer, 2014). In particular, a majority of these program focus on impacting the body dissatisfaction of participants, given its high level of predictive power for later engagement in maladaptive eating behaviors (Dakanalis et al., 2016; Kearney-Cook & Tieger, 2015; Levine & Smolak, 2006; Stice, 2002; Stice & Shaw, 2002). Another common element of successful programs is the incorporation of content related to issues such as nutritious food intake, understanding and critiquing sociocultural appearance pressures, and an incorporation of positive body image. Furthermore, although successful programs are usually theory-based, there is a range of theoretical approaches which they may utilize, ranging from cognitive-behavioral to mindfulness-based in nature (Ciao et al., 2014; Stice et al., 2007)

Cognitive behavioral therapy. Programs based on cognitive behavioral therapy (CBT) seek to improve psychological distress by managing problematic thoughts, emotions, and behaviors. To reach this goal, CBT programs rely on treatment elements such as psychoeducation, identification and modification of distorted body image-related thoughts, and exposure exercises (Cash, 2011; Cash & Hrabosky, 2004; Jarry & Cash, 2011). Furthermore, these programs appear to be quite effective in impacting body image: one meta-analysis (Jarry & Ip, 2005) found that these programs have a large effect size in the improvement of body image concerns. Alleva, Sheeran, Webb, Martijn, and Miles (2015) conducted a further meta-analysis to elucidate what specific program

elements contributed to improvements. Psychoeducation, cognitive restructuring exercises, modification of appearance-related self-talk, exposure therapy, guided imagery, stress management, and relapse prevention training were all identified as beneficial.

Cognitive dissonance. According to a meta-analysis of existing prevention programs by Stice and colleagues (2007), interventions focused on creating cognitive dissonance are also particularly effective for reducing likelihood of disordered eating (e.g., Halliwell & Diedrichs, 2014; Yager & O'Dea, 2010). One such intervention that has received significant attention, The Body Project, is a multi-session cognitive-dissonance training program which has participants complete activities such as critiquing societal ideals of beauty, learning how companies profit from these appearance beliefs, and participating in role-plays. A qualitative review of the Body Project literature by Becker and Stice (2017) found that individuals completing this program typically exhibit improvements in disordered eating risk factors such as body dissatisfaction; moreover, these results have been replicated at greater volume than any other program intended to reduce risk factors for disordered eating behaviors.

Acceptance and commitment therapy. Aligned with emphasizing positive elements of body image, a more recent meta-analysis has provided support for prevention programs rooted in third-wave behavioral approaches (Linardon, Gleeson, Yap, Murphy, & Brennan, 2018). One third-wave approach garnering significant attention is Acceptance and Commitment Therapy (ACT; Hayes, 2004). The goal of ACT is to increase psychological flexibility, which consists of six core processes: acceptance, cognitive defusion, present-moment awareness, self-as-context, values, and committed

action (Hayes, 2004; Hayes et al., 2006). Although both approaches are rooted in behavioral traditions, ACT differs from CBT by focusing less on modifying cognitions and more on acceptance of potentially distressing internal experiences in support of behaving in a values-consistent manner (Hayes et al., 2006).

As compared to cognitive dissonance, acceptance-based approaches have preliminary support as being superior in managing body dissatisfaction (Wade, George, & Atkinson, 2009). ACT has also been compared to CBT in college students in the improvement of disordered eating behaviors (Juarascio, Forman, & Herbert, 2010). In this randomized controlled trial, participants in the ACT group exhibited greater improvement in eating symptomatology over time as compared to the CBT group (although individuals in the CBT group also evidenced modest improvements in their symptoms).

ACT delivered in a brief format also appears to hold value in addressing disordered eating and its risk factors. Pearson, Follette, and Hayes (2012) conducted a pilot study of an ACT workshop to improve body dissatisfaction and disordered eating of college women. In this randomized clinical trial, participants in the treatment condition attended a one-day workshop followed by one week of self-monitoring their hunger cues. As compared to a control group (which engaged in self-monitoring only), the treatment group had significantly greater improvements in their negative body image and disordered eating behaviors. These improvements were mediated by acceptance.

Another brief application of ACT for body image concerns was examined in a randomized controlled trial by Margolis and Orsillo (2016). In this study, college women participants with pre-existing body dissatisfaction were either assigned to an acceptance,

cognitive restructuring, or control condition. Participants in both the acceptance and cognitive restructuring conditions experienced a protective effect over their body image in response to a laboratory-induced external threat.

Mindfulness and self-compassion. In addition to ACT, there are several other mindfulness-based interventions which have been tested with the emerging adult population. Beccia, Dunlap, Hanes, Courneene, and Zwickey (2018) completed a systematic review and meta-analysis of existing prevention programs for eating disorders based in mindfulness. Their review found that mindfulness-based programs significantly decrease negative body image and increase body appreciation. Moreover, mindfulness-based programs were found to be better than cognitive-dissonance programs at improving self-esteem.

Mindfulness appears to be especially beneficial for improving binge eating and emotional eating through providing a means for individuals to navigate potentially triggering thoughts, feelings, and sensations that would typically lead to a binge (Baer, Fischer, & Huss, 2005; Warren, Smith, & Ashwell, 2017). A multitude of studies have provided support for approaches incorporating mindfulness (e.g., mindfulness-based CBT, mindfulness-based stress reduction) used in this manner to improve body image concerns and reduce disordered eating behaviors (e.g., Alberts, Thewissen, & Raes, 2012; Atkinson & Wade, 2012, 2016; Kelly & Carter, 2015; Kristeller and Hallet, 1999; Kristeller and Wolever, 2011; Smith, Shelley, Leahigh, & Vanleit, 2006).

In addition to affecting negative body image and disordered eating, mindfulness-based approaches also appear to hold promise in encouraging protective factors such as positive body image. A study by Bush, Rossy, Mintz, and Schopp (2014) examined the

impact of a 10-week intervention for body image and disordered eating behaviors which integrated a mindfulness-based approach with intuitive eating principles. Compared to a control group, adult participants who received the intervention had significant increase in body appreciation as well as intuitive eating.

Other studies have also begun to examine the effects of self-compassion interventions on risk and protective factors for disordered eating. Two separate studies examined the impact of a self-compassion writing intervention on body image. Moffitt, Neumann, and Williamson (2018) randomized participants into either self-esteem, self-compassion, or control conditions. Following exposure to a lab-induced body image threat, participants were instructed to engage in a reflective writing activity. As compared to the self-esteem and control conditions, individuals in the self-compassion intervention reported the greatest improvements in body image dissatisfaction. In another study by Schaefer, Ziemer, Lampere, Raque-Bogdan, and Schmidt (2019), college women were randomized to self-compassion, traditional expressive, and control writing groups to examine the effect of these interventions on positive body image. Over a three-week period, participants were asked to write for twenty minutes once per week. Although there were no significant differences between the three groups on positive body image at the end of the intervention, increases in self-compassion across groups were associated with increased body appreciation.

Limitations of existing approaches. Despite the demonstrated efficacy of existing programs, there are also numerous limitations (especially in a college-aged population). First, there are concerns about sustainability of these approaches. For instance, although the Body Project has been quite successful in preventing later eating

disorder development, several universities in which it was tested discontinued use of the program for reasons such as staff turnover and time limitations for students and staff (Rohde et al., 2015). Part of the concerns with maintaining longevity involves a lack of providers trained to provide these services (Hart, Granillo, Jorm, & Paxton, 2011). Altogether, this points to potential concerns about sustainability of implementing existing efficacious prevention efforts. In addition to concerns about program availability, those in emerging adulthood often are limited due to factors such as perceived lack of time and financial instability which may serve as barriers to accessing treatment (Becker et al., 2017; Hunt & Eisenberg, 2010). Taken together, more innovative treatment delivery designs, which are efficacious and sustainable, are an important area of focus for this field of research.

Guided Self-Help Interventions

Guided self-help intervention (GSH) involves the provision of materials to individuals which can be applied independently with minimal guidance from a clinician. As a result of its inherent design, GSH is both cost-effective and more accessible than traditional mental health services (Lynch et al., 2010). Notably, GSH has also been rated as acceptable among college students (Saekow et al., 2015). In addition to improved feasibility over traditional interventions, the GSH approach has been shown to be effective in addressing a myriad of mental health concerns, such as anxiety and depression (Cuijpers et al., 2010; Day et al., 2013). A significant amount of research on GSH to date has examined Cognitive Behavioral Therapy (CBT) delivered in this format. For example, college students receiving a 6-week, internet-based CBT-GSH program by

Day, McGrath, and Wojtowicz (2013) experienced significant improvements in depression, anxiety, and stress as compared to a control condition.

In addition to being utilized in the treatment of other conditions, GSH has also been utilized to treat body image and eating-related behaviors, such as binge eating, bulimia nervosa, and other transdiagnostic features of eating disorders (Banasiak et al., 2005; Carter & Fairburn, 1998; Traviss et al., 2011). Although many of these studies are based upon a CBT framework, there is also an expansion to other theoretical orientations and treatment approaches.

CBT. The most thoroughly investigated guided self-help program for the prevention of eating disorders and reduction of eating psychopathology is the Student Bodies program (Winzelberg et al., 1998, 2000). Over time, the Student Bodies program has also been modified and tested in other studies of disordered eating behaviors across a continuum of severity (e.g., Jacobi, Volker, Trockel, & Taylor, 2012; Kass et al., 2014; Saekow et al., 2015). The original program was an 8-week internet-based intervention designed to impact a variety of risk factors (i.e., body image, drive for thinness, unhealthy dietary practices) for eating disorders in college women. Participants completed internet modules and posted regularly to a discussion board monitored by a trained moderator. The program included elements such as increasing understanding of sociocultural influences on body image and CBT techniques for changing body image. Although there was no significant difference between the intervention and control groups immediately following the intervention, the active group did exhibit significantly improved body image and drive for thinness at follow-up (Winzelberg et al., 1998, 2000).

A larger-scale randomized controlled trial ($N = 480$) of the Student Bodies intervention tested the impact of the internet-based intervention on risk factors (weight and shape concerns) for eating disorders in college women (Taylor et al., 2006). Participants were assigned to complete either the 8-week Student Bodies program or a wait-list control group. Participants in the active treatment group experienced significant reductions in body image concerns as compared to the control group. Furthermore, participants of higher weight also experienced a decrease in the onset of eating disorders at follow-up. The researchers noted that one significant limitation of this approach involved the training of discussion group moderators, given the cost and time investment needed to complete this task.

ACT. Although utilizing a CBT-driven approach has been most widely used, there is preliminary support for expanding GSH as a delivery format for other treatment approaches as well, such as ACT (e.g., Fledderus, Bohlmeijer, Pieterse, & Schreurs, 2011; French, Golijani-Moghaddam, & Schroder, 2017). However, to date, there are few programs which use this format in combination with ACT principles to impact risk or protective factors for disordered eating behaviors in college women. Boucher and colleagues (2016) examined the effects of a ACT-based internet intervention on increasing intuitive eating in a sample of middle-aged women. The program consisted of twelve modules which addressed topics such as recognizing hunger and satiety, flexible eating, managing cravings, and appreciating body functionality. Although participants largely completed this intervention without guidance, they did receive daily prompts encouraging them to use the intervention. Following completion of the modules over a 14-week period, participants rated the intervention as acceptable and useful. Participants

also experienced significant improvements in intuitive eating from pre- to post-intervention.

Levin, Potts, Haeger, and Lillis (2018) used an ACT-GSH approach to impact weight stigma and emotional eating (among other outcomes) in a sample of predominantly middle-aged women. Participants were provided with a self-help book and received weekly phone calls from a trained support person over seven weeks. At the end of the intervention, participants rated the individual components of the approach as acceptable; in particular, participants found the weekly check-in calls to be useful. In addition to demonstrating feasibility, participants also reported improved weight stigma and emotional eating from pre- to post-intervention.

Self-compassion. Toole and Craighead (2016) investigated the impact of an internet-based self-compassion meditation training on the body image of female undergraduate participants. Participants were either assigned to the intervention group or to a wait-list condition. Individuals in the active condition were asked to complete daily meditations over the course of one week. Although adherence to the intervention was low, participants in the self-compassion intervention group did endorse greater increase in body appreciation following the one-week period as compared to the control group (although no difference was seen in body dissatisfaction or body shame of participants).

Sommer-Spijkerman, Trompetter, Schreurs, and Bohlmeijer (2017) tested a GSH format of compassion-focused therapy, which has been used to cultivate compassion for the self and others (Gilbert, 2014). Middle-aged men and women were randomized to either the GSH or control conditions. Participants in the active condition were provided with a self-help book and received weekly encouragement emails from trained support

persons. Compared to the control condition, participants in the GSH group experienced increased self-compassion and emotional wellbeing (among other positive outcomes).

Other studies have tested the use of mobile applications (i.e., apps) as a means for enhancing self-compassion. Donovan and colleagues (2016) examined the feasibility of the use of the BodiMojo app in this manner in a sample of adolescent girls and boys. Participants were asked to use the app over a period of thirty days. During this time, they were instructed to track their mood and review or practice a "wellness" tip each day. A majority of participants rated the app as acceptable and useful. Rodgers and colleagues (2018) extended this study to examine the efficacy of BodiMojo in impacting body image and self-compassion levels. Participants in their study were randomized to either an active or control group and were asked to use the app for six weeks. Participants received messages via the app twice per day about topics such as self-compassion, mindfulness, and media literacy. They were also asked to track their mood and engage in gratitude journaling. Following the intervention, in comparison to the control group, participants using the app experienced significant increases in self-compassion as well as body esteem.

Cultivation of Positive Body Image: Mindful Self-Care

Although supporting positive body image appears to be a promising avenue for preventing eating disorder development, few programs (especially of a GSH design) have placed a primary emphasis on impacting this adaptive side of body image (versus the alleviation of negative body image). Positive body image is rooted in the positive psychology movement, which has seen significant growth over the past several decades (Hart & Sasso, 2011). At its core, positive psychology is concerned with helping

individuals “flourish” and experience subjective wellbeing through positive emotion, engagement, relationships, meaning, and accomplishment (PERMA; Seligman, 2011; Seligman & Csikszentmihalyi, 2000). Relatedly, one significant way that positive body image could be cultivated to address disordered eating is through the enactment of embodiment via engagement in mindful self-care.

This approach to enhancing positive body image is informed by the Attunement Model of Wellness and Embodied Self-Regulation (AMWESR; Cook-Cottone, 2006, 2015a, 2015b; Cook-Cottone et al., 2013; see model in Appendix A). The AMWESR model conceptualizes one’s experience of their self (the authentic self) as a dynamic integration of both inner and outer self-systems. Inner aspects encompass the physical body, emotions, and thoughts, whereas the outer aspects include important others (e.g., family, friends), community, and culture. The integration of these two aspects of the self represent attunement (Cook-Cottone, 2006, Wood-Barcalow et al., 2010.

From this perspective, inability to balance the demands of the internal and outer aspects and maintain attunement can result in disordered eating behaviors and body image concerns. For example, individuals may become mis-attuned as a result of over-focusing on societal appearance ideals, leading them to ignore or view the inner aspects as unacceptable (Cook-Cottone, 2015a). Attunement can be maintained via engagement in behavioral patterns termed mindful self-care which support positive embodiment. Mindful self-care includes behaviors such as engaging in regular physical activity, consuming nutritious foods, being self-compassionate, and having supportive relationships (Cook-Cottone & Guyker, 2018). Engagement in mindful self-care requires a shift from focusing on dissatisfaction with the body to fulfilling the body’s needs

(Cook-Cottone, 2015a) and has been linked to decreased levels of disordered eating behaviors and increased body esteem (Cook-Cottone & Guyker, 2018).

College students appear to welcome the idea of encouraging positive body image through mindful self-care. In a qualitative study by Smith-Jackson and colleagues (2014), thirty freshmen women were interviewed about their perceptions of ongoing positive body image promotion efforts on campus (e.g., through workshops, counseling sessions, etc.) and their ideas for other strategies to improve body image. The women in this study identified exercise engagement in a low-pressure environment, instructions about healthy eating, and building strong support networks to be potential means. It seems that women intuitively understand that engagement in these types of self-care behaviors can increase their evaluation of their selves.

Current Study

Given the general critical nature of providing interventions in emerging adulthood, as well as the relevance of this period in eating disorder onset, an intervention to address known risk factors and enhance protective factors is appropriate for this time. Although empirically-supported prevention programs do exist for this population (e.g., cognitive dissonance training; Becker, Smith, & Ciao, 2006), there are significant roadblocks to accessing this type of treatment for college-aged individuals such as program sustainability and accessibility (Becker et al., 2017; Hunt & Eisenberg, 2010). To account for this, the current project investigated the impact of a GSH approach on risk and protective factors for the development of disordered eating behaviors in college women as an alternative to traditional therapy interventions.

This intervention utilized a self-help book incorporating elements of positive psychology, self-compassion, mindful self-care, and ACT coupled with the guidance of a trained support person. Given the popularity of bibliotherapy, more mainstream self-help books warrant empirical testing in this manner (den Boer, Wiersma, & Van den Bosch, 2004). Aligned with past preventative efforts, this intervention targeted body image; however, the focus of the study was examining the feasibility and acceptability of this intervention to enhance positive body image via the encouragement of mindful self-care (which was also expected to improve risk factors for disordered eating, such as body dissatisfaction).

Study aim 1. Test the feasibility and acceptability of an 8-week guided self-help intervention intended to support participants in making mindful self-care decisions and improving body image.

Aim 1 analysis. Feasibility and acceptability were assessed both quantitatively and qualitatively. Post-intervention, participants were asked to complete a quantitative feedback questionnaire to measure satisfaction with the intervention. Participants were also asked open-ended questions about what they liked and disliked about the program, recommended changes, and any other feedback they wanted to share. To examine adherence and program engagement, the following were assessed: percentage of attendance at weekly support meetings, attrition from the program, and total number of book activities completed by participants each week.

Study aim 2. Preliminary evaluation of participant response to an 8-week guided self-help intervention intended to support participants in making mindful self-care decisions and improve body image.

Aim 2 analysis. Proof of concept was further assessed by examining preliminary participant response to intervention. This was assessed by examining changes from pre- to post-intervention in body appreciation, body image flexibility, body dissatisfaction, disordered eating, intuitive eating, mindful self-care, positive embodiment, self-compassion, and weight bias internalization.

CHAPTER 3: METHOD

Participants

Participants were thirty women over the age of eighteen recruited from a university setting. Participants were deemed eligible if they (a) identified as female; (b) demonstrated significantly elevated body image dissatisfaction and/or low body appreciation; (c) endorsed a desire to improve this experience; and (d) owned a mobile phone or other device that receives text messages. For the purpose of this study, elevated body image dissatisfaction was defined as obtaining a total score ≥ 52 on the Body Shape Questionnaire (indicative of moderate to marked body dissatisfaction; Evans & Dolan, 1993). Low body appreciation was defined as a score < 2.79 on the Body Appreciation Scale – 2 (one standard deviation below the mean score obtained in a sample of college women; Tylka & Wood-Barcalow, 2015).

Given the low level of care provided by this intervention program, individuals who endorsed the presence of a clinically significant eating disorder or suicidal ideation were excluded. Current eating disorder was indicated by a score ≥ 4 on the Eating Disorder Examination - Questionnaire (given that this placed an individual above the 95th percentile for young adult women; Mond, Hay, Rodgers, & Owen, 2006). Suicidal ideation was indicated by an affirmative response to any of the three questions on the Ask Suicide-Screening Questions (ASQ; NIMH, 2017). Those undergoing concurrent treatment to address body image or disordered eating were also excluded. Ineligible participants were provided with information regarding other potential resources (e.g., the university counseling center, National Suicide Prevention Lifeline) as well as the reference for the book used in this intervention.

Procedure

Recruitment. Participants were recruited using email and flyers. Recruitment materials advertised the study as an opportunity to participate in an intervention for women with body image concerns and displayed a link to an online pre-screener. Interested participants completed a screener online using the Qualtrics program to determine whether they met inclusion or exclusion criteria (including a general demographics form and measures of body image and eating disorders). Following within 24 hours of screener completion, all prospective participants were contacted via email to inform them of whether they met study criteria. Eligible participants were sent an electronic copy of a consent form and were invited via email to schedule an orientation session.

Trained support person. Each eligible participant was assigned a support person, who was either a doctoral student from a clinical psychology program or a graduate of a bachelor's program in psychology. Support persons were trained in the book philosophy and able to aid participants as they completed the intervention. The training was conducted by the lead researcher on this project, a doctoral student, and supervised by a faculty mentor in clinical psychology. Training was based on a modified version of the TeleCoach Manual (Duffecy, Kinsinger, Ludman, & Mohr, 2010), which incorporates motivational interviewing techniques to elicit participant motivation and commitment to the program, identify and solve potential roadblocks, and improve poor adherence.

The elements found in Duffecy and colleagues' (2010) support manual are consistent with results of a qualitative survey by (Traviss et al., 2013) which sought to

understand what elements contribute to successful guidance in GSH for disordered eating. Guides that were helpful, according to participants, were also perceived as motivational facilitators that also held the participant accountable in a supportive, respectful manner. Participants with good treatment adherence and successful outcomes identified a strong relationship with their guide as an important part of this process. Lastly, participants that benefited the most from the GSH approach also evidenced a "readiness to change" at the beginning of treatment, pointing to the importance of eliciting patient motivation early in the intervention process through techniques like motivational interviewing (Traviss et al., 2013).

Orientation and initial session. Eligible participants were invited to a location on campus for the orientation session. The purpose of the orientation session was to collect data, inform participants about the intervention, establish rapport with the support person, and elicit motivation to engage in the program. Participants were also provided with a $10 giftcard for their time. This meeting lasted approximately forty-five minutes in total. Following the completion of a hard-copy consent form and a consent quiz to ensure comprehension, participants completed the questionnaire battery to further assess body image flexibility, intuitive eating, mindful self-care, positive embodiment, self-compassion, and weight bias internalization (given that measures of body appreciation, body dissatisfaction, and disordered eating were already completed in the screening process). All questionnaires were completed on a computer using the Qualtrics software program.

Following the completion of the questionnaire battery, the trained support person described the intervention to the participant and provided the participant with the *Body*

Kindness book and journal. The intervention philosophy was introduced through a discussion of the Introduction and Chapter 1 of the book. Consistent with the Introduction, the support person first described the tenets and rationale of a Body Kindness approach. Chapter 1 of the book focuses on eliciting motivation to engage in body kindness behaviors, initial steps in this process (e.g., not engaging in weighing or calorie tracking), and addressing potential roadblocks to success. The value of journaling reactions to the book was emphasized, and participants were invited to complete their first journaling activity (*Talk Yourself Into Change;* Scritchfield, 2016) to explore their motivation to engage with the intervention, the intrinsic benefits of this, and how they would be able to enact change moving forward. Throughout this initial meeting, participants had a chance to ask questions.

Intervention. The intervention took place over the course of eight weeks. An outline of the intervention components, by week, can be seen in Appendix B. Prior to beginning the self-guided intervention, participants completed an in-person visit. During this visit, the participant received materials, met their support person, learned more about the book's philosophy, and had the opportunity to ask any questions. The following eight weeks were completed primarily independently by the participant, with weekly, virtual check-in meetings with the support person.

Body Kindness book. Participants were assigned the self-help book *Body Kindness* (Scritchfield, 2016) to read. The book is separated into three major sections: what you do, how you feel, and who you are. It strongly incorporates elements of third-wave behavioral interventions such as acceptance, mindfulness, psychological flexibility, values-based behavior, and encouragement of self-compassion. It is written from a body-

positive stance and encourages a more weight-inclusive approach to wellness (as compared to a weight-loss paradigm: Tylka et al., 2014).

Journaling. Each section of Body Kindness includes a variety of journaling prompts and activities to complete. To assist participants in completing these activities, they were provided with a journal to utilize each week. Given that this study aimed to explore the initial feasibility and acceptability of the book, participants were asked to only complete a minimum of one activity from the book per week; however, they were asked to indicate the activities they attempted each week during their weekly support exchange. Participants were given the option to share a de-identified copy of their journal pages at the end of the intervention. To encourage authentic responding in the journal entries, refusal to share the journal pages did not exclude participants from taking part in the study.

Support meetings. The assigned support person contacted the participant weekly via text message using Google Voice. The use of text messaging was chosen due to an increased preference for text message communication by young adults over more traditional GSH formats like telephone calls (Smith, 2011). Contact occurred at two different time points throughout each week: first, a standardized reminder or message of encouragement was sent to participants mid-week. At a second time point during the week, the pre-scheduled text exchange occurred, lasting a maximum of thirty minutes. The purpose of each session was to check in with the participant about the previous week, identify any barriers and troubleshoot concerns, and to prepare participants for the upcoming week of the intervention. The support person followed a semi-structured script to ensure that all necessary elements were covered, as well as to maintain a degree of

standardization. Participants were informed that the Google Voice account was not monitored for messages outside of the scheduled session time.

Transcripts of the messages in each support session were saved. Supporter fidelity was checked by the lead researcher through a review of a random support session transcript in Weeks 1, 3, 5, and 8. A checklist including the major aspects of the support guide was utilized for this process (i.e., session duration, agenda setting, obtaining feedback, providing encouragement, assessment of activity completion, troubleshooting if necessary, summarizing, and reminder of next week's content). Overall, fidelity was high with 87.5% of sessions following the supporter guide.

Follow-up. Following the completion of the intervention, participants were asked to complete another in-person visit to complete follow-up questionnaires. Questionnaires were again administered using the Qualtrics program on computers to assess body appreciation, body dissatisfaction, body image flexibility, eating behaviors, mindful self-care, positive embodiment, self-compassion, and weight bias internalization. Feedback from participants about the program (both qualitative and quantitative) was also collected. A copy of participants' journal pages was made if participants gave consent. Participants were provided a $15 gift card at this meeting as compensation for their time.

Measures

Demographics. The following demographic variables were assessed: age, gender, race/ethnicity, sexual orientation, academic rank and major, height, weight, socioeconomic status (via mother's educational attainment), current employment status, history of psychological treatment for body image and eating behaviors, ability status, and extent of prior experience with self-help approaches.

Suicidal ideation. As part of screening procedures, potential participants were assessed for suicidal ideation using three questions from the Ask Suicide-Screening Questions (ASQ; NIMH, 2017). Questions included "In the past few weeks, have you wished you were dead?", "In the past few weeks, have you felt that you or your family would be better off if you were dead?", and "In the past week, have you been having thoughts about killing yourself?" These questions could be answered with either Yes or No responses. An affirmative response to any of these three questions was considered sufficient to render the individual ineligible for participation and led to the provision of further resources.

Body appreciation. Body appreciation was measured using the Body Appreciation Scale, second edition (BAS-2; Tylka & Wood-Barcalow, 2015). The scale consists of 10 items which are answered using a 5-point Likert scale (1 = *never*, 5 = *always*) to indicate how frequently they engage in a given action. For example, as part of this questionnaire, participants will respond to questions such as, "I appreciate the different and unique characteristics of my body." The items are summed with higher scores indicating greater levels of body appreciation. Among a large sample of men and women from a college setting and an online community, the BAS-II was found to be internally consistent (α = .86 in the present study), test-retest reliable, and to have construct validity.

Body dissatisfaction. The shortened, 16-item version of the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987; Evans & Dolan, 1993) was used to assess satisfaction with one's body. The BSQ asks participants to respond to a series of questions asking how often they have had negative experiences of their body

over the past four weeks using a 6-point Likert scale (1 = *never*, 6 = *always*). An overall score is obtained by adding up scores on the items. Higher scores indicate greater body dissatisfaction. The BSQ has been demonstrated as internally consistent (α = .92 in the present study), test-retest reliable, and as having construct validity in a sample of college women.

Body image flexibility. The Body Image Acceptance and Action Questionnaire (BI-AAQ; Sandoz et al., 2013) was utilized to measure body image flexibility. The BI-AAQ consists of 12 items (e.g., "Worrying about my weight makes it difficult for me to live a life that I value") which are responded to using a 7-item Likert scale (1 = *never true*, 7 = *always true*). Responses are summed, with higher scores indicating increased levels of body image inflexibility. The BI-AAQ has been demonstrated to be internally consistent and reliable over a two to three-week time period (α = .90 in the present study). Notably, the scale has received some criticism of its validity as a measure of body image flexibility; however, it is currently the primary means for assessing this construct (Rogers et al., 2018; Webb et al., 2015).

Disordered eating. The 28-item Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn, 2008; Fairburn & Beglin, 1994) was utilized to screen for potential disordered eating behaviors and monitor changes in eating behaviors over time. The measure includes four subscales (restraint, eating concern, shape concern, and weight concern) which can be averaged to a score for each. Further, the four subscales can also be averaged to obtain a global score. Higher scores indicate increased disordered eating symptomatology. Participants will be asked to respond to questions such as, "Have you tried to follow definite rules regarding your eating in order to influence your shape or

weight?" to indicate the frequency of a given behavior over the past 28 days using a variety of response styles (e.g., Likert type, write-in). The EDE-Q subscales have been demonstrated to be internally consistent and test-retest reliable in a sample of college women (Luce & Crowther, 1999; α = .86 in the present study).

Intervention feedback. Participants were also asked to complete a series of Likert-scale and open-ended questions to assess feasibility and acceptability of the program. This questionnaire incorporated questions from the Acceptability and Feasibility of Intervention Measures (AIM; FIM; Weiner et al., 2017) as well as questions used in a focus groups examining feasibility of the Body Kindness book for postpartum women (Webb et al., n.d.). The AIM and FIM have been demonstrated to have strong psychometric properties; however, the predictive validity of the measures is still under evaluation. Open-ended questions assessed perceived strengths and weaknesses of the program, whether participants would recommend this to another person, and what participants would change about the program. These questions can be seen in Appendix C.

Intuitive eating. Eating in a manner which is attuned with the body's hunger and satiety cues was measured using the Intuitive Eating Scale – 2 (IES-2; Tylka & Kroon Van Diest, 2013). The measure asks participants to indicate their level of agreement with 23 items assessing their attitudes and behaviors related to eating (e.g., "I find myself eating when I am lonely, even when I'm not physically hungry") using a 5-point Likert Scale (1 = *strongly disagree*, 5 = *strongly agree*). The IES-2 consists of four subscales (unconditional permission to eat, eating for physical rather than emotional reasons, reliance on internal hunger/satiety cues; body-food choice congruence), and a total score

can also be obtained by summing the items and dividing by 23 (after reverse-scoring seven items). The scale is demonstrated to have acceptable psychometric properties in college students (Tylka & Kroon Van Diest, 2013; α = .82 in the present study).

Mindful self-care. The Mindful Self-Care Scale (MSCS; Cook-Cottone & Huyker, 2018) was utilized to measure engagement in self-care behaviors. As written, the scale asks participants to respond to 33 items with their frequency of a given behavior over the past week using a 5-point Likert scale (1 = *never*, 5 = *regularly*). To account for intervention length, the scale instructions will be modified to ask about engagement in these behaviors over the past month. The MSCS measures six factors: physical care (e.g., through healthy eating, physical activity), supportive relationships, mindful awareness, self-compassion and purpose, mindful relaxation, and supportive structure. After reverse-scoring one item, the scores in each subscale are averaged. To obtain a total score, the subscale total scores are averaged again. The scale was validated in an age-diverse sample of women, has high levels of internal consistency at both the scale and subscale levels (total scale α = .90 in the present study), and correlates with other constructs as expected (i.e., inversely correlated with disordered eating and positively correlated with body esteem; Cook-Cottone & Huyker, 2018).

Positive embodiment. Embodiment was measured using the Physical Body Experiences Questionnaire (PBE; Menzel, 2010). The PBE includes 18 items that assess the extent of participant physical embodiment (e.g., "I respect my body's physical limits") using a 7-point Likert scale. The scale consists of four subscales (Mind/Body Connection, Body Acceptance, Physical Competence, and Physical Limits), but a total score can also be obtained. Following reverse-scoring of two items (1 and 16), items are

averaged with higher scores indicating a greater level of embodiment. The PBE has been demonstrated to maintain acceptable psychometric properties in a sample of undergraduate women (α = .86 in the present study).

Self-compassion. The Self-Compassion Scale – Short Form (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011) is a 12-item questionnaire that measures an individual's level of self-compassion. The scale consists of six subscales which represent the multidimensional construct of self-compassion (common humanity, isolation, mindfulness, over-identified, self-kindness, self-judgment); however, a total self-compassion score is also provided. Participants will be asked the frequency with which they engage in a given behavior and rank their answer on a 5-point Likert-type scale (1 = *almost never*; 5 = *almost always*). Responses to these items are summed, with lower scores indicating a reduced level of self-compassion. The total score for SCS-SF has been demonstrated as having similarly strong psychometric properties as compared to the full-scale version (although the subscale scores have lower reliability; Neff, 2003; α = .77 in the present study).

Weight bias internalization. Internalized beliefs about weight and shape were measured using the 11-item Weight Bias Internalization Scale – Modified (WBIS-M; Pearl & Puhl, 2014). The WBIS-M asks participants to respond to questions such as "I am less attractive than most other people because of my weight" with their level of agreement using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Items 1 and 9 are reverse-scored and then all items are summed, with higher scores indicating greater internalization of weight bias. The original Weight Bias Internalization Scale (Durso & Latner, 2008) was initially validated in a sample of higher weight college

students, and the WBIS-M has been demonstrated to have acceptable psychometric properties across a range of weight statuses (α = .86 in the present study).

Plan of Analysis

This study utilized a pre-post design with one group. Both quantitative and qualitative analyses were utilized to investigate feasibility and acceptability of the intervention program.

Aim 1 analyses. Feasibility and acceptability were assessed both quantitatively and qualitatively. Quantitative analyses were conducted using the Statistical Package for the Social Sciences (IBM SPSS) to examine responses to the participant feedback questionnaire (Appendix C). Descriptive statistics were computed and analyzed for each question (as well as the total FIM and AIM scores) to ascertain participant reactions to the intervention. To examine adherence and program engagement, the percentage of support sessions attended was calculated (including the percentage of attrition from the program). The mean number of activities completed by participants each week (as indicated in the support exchanges) and the percentage of participants completing at least one activity per week were also assessed.

Qualitative analysis was also used to examine the open-ended feedback questions to better understand the feasibility of the intervention program. A Hypothesis Coding approach was used to identify patterns in participant responses to the program (Saldaña, 2016). This process involved the development of a codebook in advance of data collection. The codes were based on expectations about the data that would be collected (e.g., codes such as likes, dislikes, recommended changes). Following data collection, participant responses were coded by the lead researcher. Codes were then analyzed using

frequency counts (e.g., “Ten participants reported that they would like the length of the program to be longer,” “Seven participants reported that they did not have enough time to read the assigned weekly chapters”).

Aim 2 analyses. Quantitative analyses were conducted using the Statistical Package for the Social Sciences (IBM SPSS) to examine preliminary participant response to intervention. Descriptive statistics were computed for all variables. Paired t-test analyses, along with reported effect sizes in the form of Cohen’s *d*, were used to examine changes from pre- to post-intervention in each construct of interest (i.e., body appreciation, body image flexibility, body dissatisfaction, disordered eating, intuitive eating, mindful self-care, positive embodiment, self-compassion, and weight bias internalization).

CHAPTER 4: RESULTS

Data collection for the study occurred from September to December 2019. One hundred and sixty-nine women expressed interest in participating in the study by emailing the address in the study advertisements. Forty-seven of these individuals did not complete the screener survey sent to them, and seventy-four were deemed ineligible (*n* = 17 did not endorse elevated body image concerns; *n* = 30 endorsed clinically significant eating disorder symptoms; *n* = 8 were enrolled in concurrent treatment; *n* = 40 responded affirmatively to the ASQ). Forty-eight women who met criteria for the study were invited to participate, and thirty participants formally began the program.

Demographics

Among the thirty participants that began the program, the average age was 20.1 years (*SD* = 1.67). A majority of these participants identified as either White (40%) or Black (30%). The average BMI was 28.54 (*SD* = 5.36), which is categorized as the "overweight" range (Centers for Disease Control and Prevention, 2017). Although a majority (70%) of participants identified as heterosexual, 30% (*n* = 7) indicated that they identified as bisexual. Other participant characteristics can be seen in Table 1.

Table 1. Participant Demographics

		M/%	***SD/n***
Age		20.10	1.67
BMI		28.54	5.36
Race/Ethnicity	White	40	12
	Black	30	9
	Asian/Asian-American	13.3	4
	Multiracial	10	3
	Hispanic/Latina	6.7	2
Sexual Orientation	Heterosexual	70	21
	Bisexual	30	9
Relationship Status	Single	70	21

	In a relationship	26.7	8
	Divorced	3.3	1
Academic Rank	Freshman	16.7	5
	Sophomore	40	12
	Junior	23.3	7
	Senior	16.7	5
	Graduate student	3.3	1
Mother's Educational Attainment	Incomplete high school	10	3
	High school/GED	16.7	5
	Some college	40	12
	Bachelors	26.7	8
	Graduate Work	6.7	2
Employment Status	Student not employed	40	12
	Student working part-time	60	18
Prior Experience with Self-Help	Experienced	6.7	2
	Somewhat experienced	33.3	10
	Inexperienced/No experience	60.0	18

Note. $N = 30$

Aim 1: Feasibility and Acceptability

Study attrition. Participants were considered withdrawn from the study if they notified the study coordinators that they were no longer interested or missed three consecutive support sessions. One participant withdrew at each of Weeks 4, 5, and 6 and two participants withdrew at Week 7. Three of these withdrawals were due to lack of engagement with the study (i.e., participants did not respond to three weeks' attempts of contact), one was due to a family emergency, and one was due to an expressed lack of time. In total, twenty-five (83.3%) participants completed the program through Session Eight, and twenty-two (73.3%) attended the follow-up session. One participant failed to complete the post-treatment questionnaires at the follow-up session; as a result, they were excluded from the dataset, and final analyses included a total of 21 participants.

Support session engagement. Participants consistently attended text sessions,

with 90.4% of sessions attended throughout the study. On average, these sessions lasted 28.1 minutes.

Activity completion. Participant engagement in book activities was assessed by supporters at each text session. Participants were asked to complete at least one activity per week, and the mean number of activities completed each week was 1.40. Across the entire program, participants reported completion of at least one activity per week in 84.2% of attended sessions. It is relevant to note that, in some weeks, there was only one activity available to complete.

Feedback questionnaire. Both quantitative and qualitative analyses were utilized to examine participant attitudes toward the intervention program. Quantitative analysis was utilized to understand participant response to the Likert-style questions on the questionnaire. Descriptive statistics were computed and analyzed for each feedback question (as well as total scores for the FIM and AIM scales) and can be seen below in Table 2. Overall, participants endorsed favorable views of both the book and the program as a whole.

Table 2. Feedback Questionnaire Data

Statement	***M***	***SD***
I found the book readable.	4.85	.37
I found the writing style in the book engaging.	4.70	.47
I found the book visually appealing.	4.85	.37
I found the examples used in the book relatable.	4.55	.61
I would prefer an electronic copy of the book to the hard copy.	1.60	.82
I would recommend the book to others.	4.55	.51
This program improved my body image.	3.85	.81
This program helped me to be kinder to myself.	4.30	.66
I believe that this program would be helpful for other women my age.	4.60	.50

I believe that this program is doable given the constraints in my life.	4.50	.51
I had enough time to read the assigned book chapters each week.	4.45	.76
I had enough time to complete the book activities each week.	4.45	.76
The weekly communication with my support person was helpful.	4.45	.69
I received the right amount of messages from my support person.	4.50	.51
I would recommend this program to others.	4.60	.60
AIM	4.61	.43
FIM	4.63	.46

Note. $n = 21$

Qualitative analysis was used to examine the open-ended feedback questions. Consistent with the hypothesis coding approach (Saldaña, 2016), codes were created prior to data collection based upon expected responses. Feedback fell into seven different categories: likes, dislikes, perceived barriers to participating in the program, suitability for college women, perceived benefits of the program, recommended changes, and why the participant would (or would not) recommend the program to others.

Participant feedback: Likes. When asked about what they liked about the program, a number of participants discussed their support person. Thirteen participants indicated that they enjoyed having the text sessions with their support person throughout the program. For instance, one participant wrote, "I really enjoyed the constant communication between my support person and me. It truly was motivating and created the enthusiasm needed to continue with the reading." Five participants noted that the interaction with their supporter enhanced their engagement with the program and made them feel more motivated/accountable; for example, one person wrote, "I believe the support person was a phenomenal idea and can create long-lasting feelings of

encouragement." Five participants stated that their support person assisted them with useful information or advice throughout the program.

Several participants also commented on the book itself. Six participants reported that the book provided useful information in a way that they could apply it to their lives. For example, one participant wrote, "I liked the book itself the most about the program because I think it has some really positive messages that a lot of women need to hear." Another said, "I loved reading the chapters and then going back and doing the spiral-ups because they helped me better relate the information to my life." Two participants indicated that they enjoyed the flexible nature of the book. The writing style was noted as enjoyable by two participants, and one person commented on the visual appeal.

Participant feedback: Dislikes. When asked about dislikes, ten participants reported that there was nothing they disliked about the program and eight participants left the question blank. Three participants noted that, in certain weeks, it felt as if there was "a lot" of reading and they did not have the time to complete it. Three participants commented on the support sessions for various reasons; for instance, one participant stated that they would have liked to be able to reach out to their supporter between sessions if needed. Another participant wrote, "...some of the weeks the checkups felt more script-like than others, which I know is probably because there are certain questions that must be asked." A third participant noted that they did not like having to speak to a different support person in a week they rescheduled from their normal support time.

Participant feedback: Perceived barriers. When asked about perceived barriers to participation in the program, the most frequently cited concern was time management. Thirteen participants commented on this issue, and multiple individuals noted it was

difficult to balance engagement with their schoolwork. For example, one wrote, “I think it was more of a time-management issue, in which it was difficult sometimes to do this program as well as study for exams and do assignments.” Two participants noted that they had a difficult time finding the motivation to engage with the book. One of these participants reported, “...wanting to self-sabotage instead of practicing body kindness.”

Participant feedback: Suitability for college women. Participants were asked how well they believed this program meets the self-care needs of college-aged women. Overall, participants appeared to have a positive opinion of this aspect of the program, with sixteen participants indicating a belief that it sufficiently addresses the needs of this group. Several of these individuals noted that the guidance of the program felt “manageable” or “doable.” Regarding both the book and the program as a whole, seven participants noted that it felt personalized and/or relevant to their lives. One participant wrote, “I think the program was spot-on with the self-care aspects because most of the concepts discussed are issues that can be seen everyday.”

On the other hand, a few participants also commented on the lack of relevance of the book material to their lives. Two participants described this as a barrier to their engagement. One wrote, “I feel like some topics were about things I haven't experienced yet or maybe just see in a different way than a more established women would.” Three participants noted that this was what they disliked most about the program; for example, one participant wrote, “Some of the examples didn't always help me and the author seemed to make some assumptions about having friends and a support system.” This concern about relevance also was raised when asked how well this program meets the needs of college-aged women. Three responses to this question noted that the book

content felt more suited to a mature audience. For instance, one person stated, “I could tell [the book] was clearly geared towards older, middle aged women.”

Participant feedback: Perceived benefits. When asked to identify any perceived benefits of the program, a notable number of participants pointed to the skills they had learned. Seven individuals commented on the benefit of learning strategies to utilize in the future; for example, one participant wrote, “I am now able to go to something to practice body kindness when my body image is poor. I have practical choices for body kindness to choose from.” Participants also shared how the program helped them to learn strategies not directly related to body image. One participant believed that they had improved their time management skills, and another shared that they had been able to save money by using strategies in the book.

Participants also reflected on how the program impacted their outlook on self-care and body image. Ten participants shared that the program had benefited them by increasing their feeling of love, appreciation, and/or positivity toward themselves. One of these participants wrote, “Honestly throughout this program I was better able to think about my self-care and how I need to appreciate myself more often. It was a refreshing viewpoint and brought back a positive and happier me.” Two participants expressed that the program had taught or reminded them that they were not isolated in experiencing body image concerns; for instance, one stated, “I think I was reminded many times throughout the semester that everyone is trying the best they can, including me, and this was helpful to hear from someone else's perspective.” Five participants also commented, more generally, on how the program had changed their perspectives on a variety of topics.

Participant feedback: Recommended changes. Overall, many participants appeared to be satisfied with the current state of the program: seven participants wrote that they would not change it, and two left the question blank. Of those that did make suggestions, three participants commented on the support person. Two of these individuals recommended that there be more flexibility in meeting time and type (i.e., ability to meet in person or communicate outside of predetermined times if needed). One individual suggested that the support person could be an optional feature. Other participants commented on the format of the program; for instance, one shared, "My only suggestion would be to make it longer" while another participant wrote that an online diary would be a desirable change. Two individuals suggested that they would like to meet other participants in the program for support. One participant noted that they would recommend improving the relevance of the book content for a wider variety of diets. Lastly, one participant wrote that they would prefer more guidance on which book activities to complete each week, and another stated that they would like there to be less reading.

Participant feedback: Recommending to others. All participants that completed the questionnaire responded that they would recommend this program to others, and two participants explicitly stated that they had already shared about the program or the book with others in their lives. When asked to provide their reasoning for recommendation, nineteen wrote that they believed the book was beneficial to them and/or would help others. Three of these individuals shared their belief that anyone could benefit from the knowledge in the program. Three others wrote that they would recommend the program because it was enjoyable to complete. A few participants also commented on the type of

person that they believed would benefit most from the program. Three noted that the program is especially useful if you have the time to devote to completing it. Two others shared that they believed a wider variety of individuals, such as men or adolescents, would also benefit from participation.

Aim 2: Preliminary Participant Response to Intervention

To examine participant response to intervention, changes from pre- to post-intervention in each construct of interest (i.e., body appreciation, body image flexibility, body dissatisfaction, disordered eating, intuitive eating, mindful self-care, positive embodiment, self-compassion, and weight bias internalization) were examined. Means, standard deviations, t-scores and effect sizes (in the form of Cohen's *d*) for each of these can be seen in Table 3. Following the 8-week GSH intervention, significant changes ($p < .01$) were seen for each measured outcome, with large effect sizes observed (*d* ranging from 1.23 to 2.88).

Table 3. Pre- and Post-Intervention Means, Standard Deviations, T-scores, and Effect Sizes for Variables of Interest

	M (SD)	***T***	***D***
Body appreciation	Pre: 26.81 (5.73) Post: 36.62 (4.63)	-6.10**	-1.88
Body dissatisfaction	Pre: 65.67 (6.54) Post: 36.43 (12.78)	9.33**	2.88
Body image flexibility	Pre: 56.81 (9.85) Post: 39.19 (12.49)	-4.93**	1.57
Disordered eating	Pre: 67.62 (12.94) Post: 35.24 (21.01)	6.01**	1.86
Intuitive eating	Pre: 2.78 (0.39) Post: 3.42 (0.45)	-4.93**	-1.52
Mindful self-care	Pre: 2.76 (0.55) Post: 3.46 (0.30)	-5.12**	-1.58
Positive embodiment	Pre: 4.28 (0.72)	-3.99**	-1.23

	Post: 5.23 (0.82)		
Self-compassion	Pre: 2.41 (0.56)	-6.31**	-1.95
	Post: 3.39 (0.44)		
Weight bias	Pre: 32.86 (10.99)	-6.26**	-1.93
internalization	Post: 54.24 (11.14)		

Note. $n = 21$; ** = $p < .01$

CHAPTER 5: DISCUSSION

Eating disorders and their subclinical presentation (i.e., disordered eating) are viewed as manifestations of negative embodiment and pose significant threats to the wellbeing of emerging adult women (e.g., Coric & Murstein, 1993; Grucza et al., 2007; Herzog et al., 1999; Menzel & Levine, 2011). Although efficacious prevention programs targeting risk factors for disordered eating such as body image dissatisfaction do exist, there are concerns about accessibility and sustainability of these efforts (National Eating Disorder Association, 2013; Rohde et al., 2015). This is particularly true for the emerging adult population, who perceive that they have significant time as well as financial limitations (Becker et al., 2017; Hunt & Eisenberg, 2010). Sustainability is also limited by a lack of trained providers to implement these approaches across settings (Hart et al., 2011). One solution to these barriers is guided self-help intervention (GSH), which is both cost-effective and more accessible than traditional mental health services (Lynch et al., 2010).

Another concern with existing prevention programs (especially those of a GSH nature) is that they typically only focus on impacting negative aspects of functioning, instead of seeking to support adaptive processes and overall wellbeing. This is the case despite recent scholarship which suggests that supporting positive facets of functioning may also prevent development of disordered eating behavior (e.g., Cook-Cottone & Guyker, 2018). This evidence has motivated additional calls for more inclusion of protective factors in ongoing research and practice efforts to impact body image (Atkinson et al., 2020). Aligned with the Attunement Model of Wellness and Embodied Self-Regulation (AMWESR; Cook-Cottone, 2006, 2015a, 2015b; Cook-Cottone et al.,

2013a), one promising strategy for promotion of positive functioning consists of encouraging engagement in mindful self-care behaviors in order to engender positive embodiment. Mindful self-care consists of a wide range of behaviors, from consuming nutritious foods and being self-compassionate to nurturing interpersonal relationships, and has been associated with improved body image as well as decreased disordered eating (Cook-Cottone & Guyker, 2018).

To account for limitations of past prevention programs, the present study explored the feasibility and acceptability of a novel, 8-week GSH intervention intended to impact both risk and protective factors for eating disorder development in emerging adult women. This program utilized a self-help book incorporating elements of Acceptance and Commitment Therapy (ACT) and positive psychology to support engagement in mindful self-care behaviors. Each week, participants were asked to read an assigned section of the book, complete one activity of their choice, and communicate with a trained support person. The novelty of this program was further enhanced using text messaging for communication, which is arguably a more acceptable modality for the emerging adult population as compared to phone calls (McClay, Waters, Schmidt, & Williams, 2016; Smith, 2011).

The study implemented a pre-post design with one group ($N = 30$). Feasibility and acceptability were measured using a mixed-methods approach. To examine adherence and program engagement, the following were assessed: attrition from the program, percentage of attendance at weekly support meetings, and mean number of book activities completed by participants. To further support proof of concept, preliminary participant response to the intervention was tested by examining changes from pre- to

post-intervention in several risk and protective factors for eating disorders (i.e., body appreciation, body dissatisfaction, disordered eating, intuitive eating, body image flexibility, mindful self-care, self-compassion, positive embodiment, and weight bias internalization).

Overall, the present study findings indicate that the use of a GSH program which seeks to reduce risk factors for eating disorders while also supporting current wellbeing and adaptive functioning through a mindful self-care approach may be indicated for emerging adult women. Further discussion of the findings and implications for future research, clinical practice, and theory are presented below.

Aim 1: Feasibility and Acceptability

The first aim of this study was testing the feasibility and acceptability of the GSH intervention. Across both quantitative and qualitative feedback data, participants endorsed favorable views of the program. Altogether, the data suggest that this intervention is both feasible and acceptable for the emerging adult population.

Participant opinion. Participants endorsed positive attitudes of the program across both quantitative and qualitative measures. In particular, participants indicated that they enjoyed working with their support person and found this component of the program motivational. This is consistent with what has been reported in past GSH program investigations (Andersson, 2016). One concern with traditional programs is the lack of trained professionals to implement these approaches (Becker et al., 2017). Supporters in the present study possessed a range of background knowledge in psychology but were each trained in accordance with a modified coaching guide (which was followed with a high level of fidelity). Results provide initial support for the use of trained

paraprofessionals in this type of approach, which may lend to program sustainability when implemented in real-world settings.

Although most participants endorsed finding the book content enjoyable and relatable, one concern noted by a few individuals was that at times the program felt designed for a more mature audience. Emerging adulthood is a period marked by unique life concerns, such as burgeoning independence and establishment of identity (Arnett, 2000, 2007). Furthermore, although much of the book content can likely be generalized to a wide audience, suggestions based on having long-term relationships, stable access to resources such as kitchen facilities, or assuming financial security may preclude some individuals from identifying with the book at this point of the lifespan.

Program adherence and engagement. Overall, participants displayed a high level of engagement with and adherence to the intervention program. This was demonstrated by consistent attendance at virtual support sessions (i.e., 90.4% of sessions attended) as well as a high level of reported completion of at least one activity per week. Nearly three-quarters of participants completed the entire program (including the follow-up session), which is consistent with past evidence suggesting that programs with coach assistance often demonstrate strong participant retention (Wojtowicz, Day, & McGrath, 2013). The high level of completion seen in the current study lends further evidence to the feasibility of this approach.

In past investigations, time management has been a noteworthy barrier to accessibility to and engagement with prevention programs for emerging adults (Hunt & Eisenberg, 2010). Unsurprisingly, this was also a prominent consideration in the present study as well. In the quantitative portion of the feedback questionnaire, participants who

completed the study indicated on average that they believed that this program was doable given other time constraints in their life; however, many participants also pointed to time management as a barrier to their participation in qualitative feedback. Despite these concerns about time management, there was still a considerable level of engagement with the program, which suggests that perhaps small modifications (discussed further in the Future Implications section) could improve participant perceptions of this aspect.

Aim 2: Initial Response to Intervention

The second aim of this study was conducting a preliminary evaluation of participant response to the intervention as proof of concept. This was examined by assessing changes from pre- to post-intervention in constructs of interest. Across each construct, significant changes were observed (with large effect sizes). Although the mindful self-care approach has been recommended in the past as a valuable adjunct to disordered eating treatment (Cook-Cottone, 2015a), this is the first time in which it has been explicitly utilized in a GSH format. These results provide further indication that the use of a mindful self-care approach can serve to not only support adaptive functioning but also to mitigate risk factors for disordered eating.

Unsurprisingly, given the focus on encouraging mindful self-care behaviors by the utilized self-help book, participants endorsed a significant increase in these behaviors across the study (including intuitive eating). This was accompanied by a similar reported improvement in the experience of positive embodiment, which could be conceptualized as being enacted through mindful self-care behaviors. Consistent with theory about engagement in mindful self-care supporting positive body image, significant improvements in body appreciation and body image flexibility, as well as self-

compassion, were also observed across the intervention. Interestingly, participants also described their perceptions that these positive changes had occurred in the feedback data. Although the prior study of GSH programs explicitly utilizing a mindful self-care approach is limited, the results of this study point to the feasibility of delivering this approach in a self-guided format.

The positive changes displayed by participants in this study are also consistent with observations in other GSH studies utilizing an ACT-based approach to enhance body image and adaptive functioning (e.g., Boucher et al., 2016). Participants in the present study were exposed to elements of both ACT and mindful self-care, which are largely compatible in theory and approach. Like the mindful self-care approach, ACT encourages a focus shift toward expressing values through intentional behavioral acts (Hayes et al., 2006). Both also support a focus on functionality. Results of a recent study examining the impact an online writing task requiring participants to consider positive aspects of their appearance and body functionality showed that encouraging this shift in focus is also associated with improvements in positive body image (Mulgrew, Prichard, Stalley, & Lim, 2019).

Improvements demonstrated by participants in the present study can also be compared to those seen in other GSH programs focused on self-compassion training. Similar to studies by Toole and Craighead (2016), Donovan et al. (2016), Sommer-Spijkerman et al. (2017), and Rodgers et al. (2018), participants in this study experienced improvements in both positive body image and self-compassion. Although the Body Kindness book is not solely comprised of compassion-focused material, it does include a

chapter solely dedicated to the concept. An emphasis on self-compassion is also observable throughout other chapters.

In addition to improvements in adaptive functioning, participants in the present study also demonstrated changes in maladaptive behaviors and processes across the intervention. Most notably, large changes were observed in body image dissatisfaction; further, improvements were also observed in disordered eating and weight bias internalization. Results of this study further support the idea that encouraging engagement in adaptive coping can mitigate more negative processes. It is possible that promoting a focus on tending to the self through mindful self-care necessitated participants to shift away from dissatisfaction with their bodies and subsequent maladaptive strategies to change it (e.g., through dieting; Cook-Cottone, 2015a).

The changes seen in maladaptive constructs in the present study are also consistent with the results of the GSH study by Levin et al. (2017), which found that the use of ACT led to improvements in emotional eating and weight stigma internalization. Changes in maladaptive eating behaviors have also been observed by other self-help interventions emphasizing self-compassion training (e.g., Kelly & Carter, 2015). Altogether, the results of the present study add incremental evidence to the literature base supporting the use of third-wave behavioral interventions to impact risk factors for disordered eating (Linardon et al., 2019).

Future Implications

Implications for research. This study provides the groundwork for future larger-scale intervention investigations based in the current approach. Models for successful intervention development call for programs to be scaled over time in order to create

approaches which are both efficacious and maximize external validity. When considering the Stage Model for Behavioral Intervention Development (Onken et al., 2014), the present study took place at Stage 1. This stage calls for preliminary development and evaluation of interventions through methods such as feasibility and acceptability testing. Based on the results of this study, next steps for intervention development may involve more traditional testing of intervention efficacy (i.e., Stage 2) followed by implementing this approach in a rigorous manner within existing systems (Stage 3). In addition to incorporating more rigorous control, dismantling studies examining active ingredients and mechanisms of change may also add value in this line of research.

Based on the results of this study, future iterations of this intervention program may benefit from certain changes. For instance, regarding format of the program, changes that improve the flexibility of implementation may be desirable to individuals. Providing the option of asynchronous text messaging (versus fixed timing of sessions) is one potential avenue to consider. Changing the length of the program, as well as the amount of content provided to participants, could also be tested to lighten burdens on participants' time. Other changes may be made to improve the utility of the program, such as putting some elements online (e.g., the journal). This would also provide a rich source of data for researchers to examine. Related to improvement of data, more frequent measurement throughout the study (e.g., a mid-treatment assessment, delayed measurement following final sessions to examine long-term nature of effects) is also a desirable modification.

The present intervention could also be modified to further enhance elements which many participants already reported enjoying. Given that participants found the

supportive elements of coaches to be a strength, incorporation of a support group among participants may expand upon this aspect. The relevancy of the content is another aspect to consider. Although most participants found the book relatable, adapting the principles in the book to more directly address common concerns of emerging adults would likely be a welcome change. Moreover, providing a disclaimer in the orientation session that not all content may feel relevant to each participant could be another strategy for addressing this participant perception.

Given that a high number of individuals expressed interest in participating in the present study but were ineligible for a variety of reasons, future related studies may also want to consider if the eligibility criteria could be expanded in a safe and appropriate manner. The major reasons for ineligibility included suicidal ideation, clinically significant eating disorder symptoms, and lack of body image distress. For example, it is possible (especially for those already receiving treatment) that a GSH approach such as the one used in the present study could be tested as a supplement to their existing treatment plan. This would provide a safety net in case the approach used in the present study is not adequate to address a higher level of care.

Relatedly, future research may wish to examine how this approach could be broadened to other populations with body image concerns. Other groups with treatment accessibility concerns should also be considered in future research endeavors. For example, the significant prevalence of individuals with sexual minority status in the present study may indicate that a GSH approach is appealing to this population. Although this group does endorse elevated body image concerns, they are frequently underrepresented in intervention studies (Diemer, Grant, Munn-Chernoff, Patterson, &

Duncan, 2015). If a variety of groups appear to benefit from this current approach, it could also be worth considering whether this intervention would be valuable when implemented on a more universal level (as compared to the selective approach used in the present study).

Lastly, although the use of mobile health interventions has increased in popularity for the prevention and treatment of eating disorders, a significant amount of research that has been conducted has examined the use of mobile applications (Aardoom, Dingermans, & Van Furth, 2016). Among GSH programs, there has been utilization of virtual technology such as telephone calls (e.g., Levin et al., 2018), online support groups (e.g., Saekow et al., 2015), and automated text messaging (e.g., Shapiro et al., 2010); however, to date there has been limited testing of the use of reciprocal text messaging in the provision of GSH. The results of the present study suggest that continued efforts to examine text messaging in this context are warranted, especially given the desirability of text messaging for many over telephone conversation in this current time period. The use of text messaging may be even more appropriate for underserved populations (e.g., low income groups) than mobile applications, given that it typically does not require access to the Internet and thus overcomes certain accessibility concerns (Aguilera, 2014).

Theoretical and clinical implications. Beyond research, the results of the present study also hold implications for future clinical theory and application. In particular, this investigation lends partial support to the AMWESR model's (Cook-Cottone, 2006, 2015a, 2015b; Cook-Cottone et al., 2013) assertion that a focus on mindful self-care will not only support adaptive functioning and positive body image, but also may alleviate disordered eating and related processes. The primary focus of the present intervention

was on the internal self-system in this model (i.e., thoughts and feelings about the body). By increasing their active, intentional participation in mindful self-care, participants were able to engage in a type of behavior which their body image concerns would have limited in the past, thus interrupting a vicious cycle in which the body is seen as somehow unworthy of this type of kindness. Future work may wish to continue exploration of how mindful self-care impacts not only the internal system, but the alignment between internal and external aspects of the self portrayed in the AMWESR model.

Beyond provision of support for existing theory, the success of providing treatment in the GSH format is particularly intriguing given that it lends itself to greater treatment accessibility for groups which have been underserved in the past. This directly relates to broader implications for the use of bibliotherapy and self-help books with clients and patients. Although bibliotherapy is a common recommendation by providers across the healthcare system, at times exploration of the utility and efficacy of these books (especially when recommended in an unguided, unstructured manner) has been lacking (Bergasma, 2008). Beyond the efficacy of self-help approaches, it is also vital that these programs are tested to determine whether these approaches are contraindicated for patient use. This could occur through direct worsening of symptomatology or waste of patient time and resources which could be dedicated to accessing proven intervention methods.

Particularly relevant to the current investigation is past criticism of ACT self-help approaches for a variety of presenting concerns. Rosen & Lilienfeld (2016) specifically criticized the development and promotion of these programs, asserting that many have been encouraged for unguided use by the public without direct assessment of their

effectiveness. Despite these past concerns, the present study (along with other recent investigations such as the study by Levin and colleagues, 2018), points to the potential of GSH programs grounded in ACT to be beneficial for certain concerns. Ultimately (and aligned with concerns noted by Rosen & Lilienfeld, 2016), further exploration of these types of approaches is warranted before an ultimate conclusion can be drawn; but, the present study does offer preliminary evidence supporting recommendation of the Body Kindness book for addressing risk and protective factors for disordered eating in the emerging adult population.

Strengths and Limitations

The present study had numerous strengths. First, the sample was diverse in race/ethnicity, sexual orientation, and socioeconomic status as compared to other prevention studies (e.g., see Rodgers et al., 2019 for more information on the lack of racial/ethnic representation in prevention studies). Another strength of this study was the balance between novelty and evidence base in the approach utilized. Although the book incorporated elements of evidence-based treatments such as ACT, this was the first study of its kind to incorporate an expanded focus on mindful self-care behaviors in the context of a GSH approach.

The design of the study is also notable as a strength (outside of the typical constraints of this type of feasibility study, explored below). To measure constructs of interest, measures were utilized which have strong psychometric properties in an emerging adult population. Moreover, research assistants were well-trained using established coaching guides and fidelity checks were incorporated to ensure no additional training was necessary throughout the study. Lastly, multiple methods were utilized for

data collection. This allowed for a richer picture to be painted regarding participant opinion of and response to the intervention program and directly impacts future recommendations for implementation through use of more descriptive participant feedback.

It is also important to acknowledge the limitations of the current study and how these may impact interpretation and generalizability of results. First, there are inherent limitations to the single group, pre-post design. Namely, this includes lack of randomization, which should temper interpretation of results (especially regarding changes over time in constructs of interest). Lack of control in some areas (e.g., in some weeks where participants needed to reschedule, a different supporter filled in) is also notable. Even without a control group, running several groups (each beginning at a different time point) might have been a better test of how feasible this intervention is given that participant engagement may vary as a result of factors such as time of the semester. Lastly, due to study design, participation was offered on a first-come, first-served basis. As a result, not all eligible individuals were able to participate, which may limit the generalizability of results to the larger population.

Another significant limitation of the current study was lack of participant follow-up. Because this was not incorporated into the study design, it is unclear whether improvements seen by participants were sustained over time. There were also no attempts to contact participants to learn why they may have withdrawn from the study. Although one participant did share that this was due to family concerns, it is unclear why others may have withdrawn at other various time points.

Participant dropout, especially following Week 8 prior to the follow-up session, also created a concern about missing data. It is likely that this dropout occurred, in part, as a result of the coinciding timing of the follow-up sessions with the university's final exam period; however, it is still unknown whether these additional data would have painted a different picture with regard to the feasibility and acceptability of this approach. Future studies may wish to consider an assessment process which is entirely online in an effort to improve retention of participants and minimize the gap between the end of treatment and measurement of outcomes.

Conclusion

Innovative strategies for addressing risk factors for disordered eating are an important area of focus. The present study provides support for the feasibility and acceptability of a novel, GSH approach in addressing body image concerns of emerging adult women. This approach not only sought to impact risk factors, but also employed an inclusive strategy to also support adaptive functioning through the encouragement of mindful self-care. Although this study is not without limitations, it does provide initial groundwork for future, more rigorous testing of this approach. Ideally, this will broaden prevention efforts and allow for groups which have been limited in the past by issues of accessibility to benefit from these approaches.

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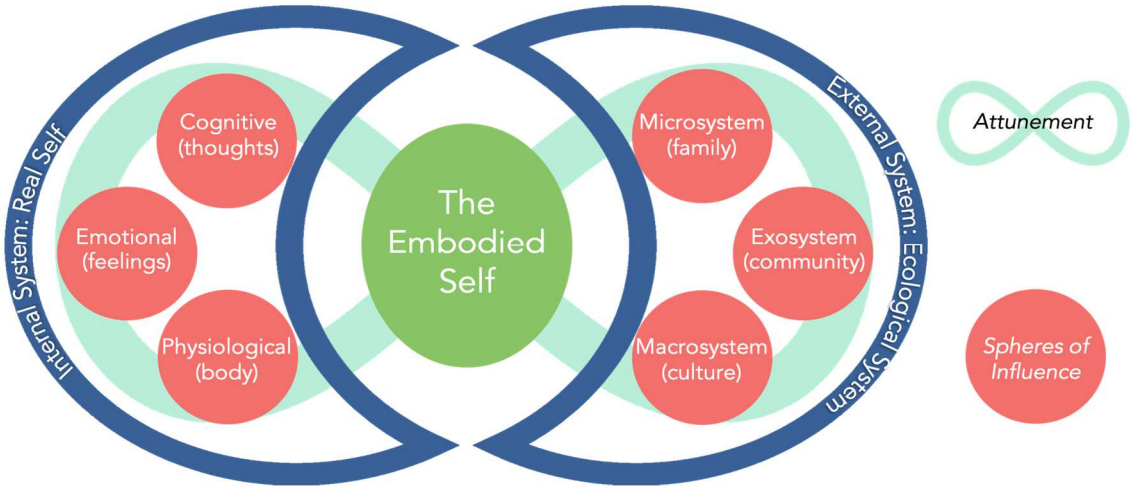
APPENDIX A: THE ATTUNEMENT MODEL OF WELLNESS AND EMBODIED SELF-REGULATION



Cook-Cottone 2006, 2015a, 2015b
This version of the model graphic created and shared by Erin V. Thomas

APPENDIX B: INTERVENTION WEEK OUTLINES

Orientation: In-person

- In-person visit to meet trained support person
- Completion of pre-treatment measures
- Receive study materials and first gift card compensation
- Introduction to book philosophy and how to use the book (Introduction and Chapter 1)
- Opportunity to ask questions and discuss potential roadblocks to implementation
- Discuss weekly supporter contact

Week 1: Eating with Body Kindness (Chapter 2)

- Learning to be flexible with food choices (e.g., choosing foods that are enjoyable)
- Intuitive eating (i.e., eating in response to body's hunger and satiety signals) versus rigid food rules
- Mindful eating (i.e., paying attention to senses while eating with present-moment, open awareness)

Week 2: Fitness for Your Life and Sleep (Chapters 3 and 4)

- Developing non-appearance motivations for physical activity
- Creating an action plan for when physical activity can occur and addressing potential roadblocks
- Mindfulness in exercise
- Using sleep hygiene and other techniques to fall and stay asleep more easily

Week 3: All Feelings Matter (Chapter 5)

- Giving yourself permission to experience a broad range of emotions
- Maintaining commitment to desired choices in the face of distressing emotions (i.e., psychological flexibility)
- Recognizing and managing emotional eating

Week 4: Make Room for More Fun, Resilience (Chapters 6 and 7)

- Informal mindfulness to increase awareness of "fun" in everyday life
- Stress management through reframing, letting go of perfectionism
- Consciously fostering positive emotions

Week 5: Decide What You Stand For (Chapter 8)

- Values identification
- Creating goals based on values

Week 6: Planning and Time Management (Chapter 9)

- Create a "Body Kindness Blueprint"
- Finding time to engage in self-care behaviors
- Strategies for saving time and money in self-care

Week 7: Self-Compassion (Chapter 10)

- Strategies for engaging in self-compassion using the PACT approach (i.e., Presence, Acceptance, Choice, Take action) and overcoming roadblocks in this process
- Body scan and loving-kindness meditations

Week 8: Social Connections and Building Your Tribe (Chapters 11 and 12)

- Identification of important others in your life and ideas for nurturing these relationships
- Effective communication
- Connecting to others who will support your body kindness goals
- Connecting to your community, planet, and spirituality

Program Completion: In-person

- In-person visit
- Complete post-treatment measures
- Receive second gift card compensation
- Termination with trained support person

APPENDIX C: PARTICIPANT FEEDBACK QUESTIONNAIRE

Feedback Questionnaire

Please indicate your level of agreement with the following statements. When statements include the phrase, "the program" this refers to the combination of the reading the book, completing at least one activity from the book each week, and communicating with your support person on a weekly basis.

1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree

#	**Statement**	**1**	**2**	**3**	**4**	**5**
1	I found the book readable.					
2	I found the writing style in the book engaging.					
3	I found the book visually appealing.					
4	I found the examples used in the book relatable.					
5	I would prefer an electronic copy of the book to the hard copy.					
6	I would recommend the book to others.					
7	This program improved my body image.					
8	This program helped me to be kinder to myself.					
9	I believe that this program would be helpful for other women my age.					
10	I believe that this program is doable given the constraints in my life.					
11	I had enough time to read the assigned book chapters each week.					
12	I had enough time to complete the book activities each week.					
13	The weekly communication with my support person was helpful.					
14	I received the right amount of messages from my					

	support person.					
15	I would recommend this program to others.					
16	The program meets my approval.*					
17	The program is appealing to me.*					
18	I like the program.*					
19	I welcome the program.*					
20	The program seems implementable.*					
21	The program seems possible.*					
22	The program seems doable.*					
23	The program seems easy to use.*					

*Note: These items taken from the Feasibility and Acceptability of Intervention Measures (FIM; AIM; Weiner et al., 2017)

Open-Ended Questions

1. What did you like about the program?
2. What did you dislike about the program?
3. How well did this program address the self-care needs of college women?
4. What if any barriers or challenges did you face while going through the program?
5. What if any benefits or successes did you experience while going through the program?
6. What changes would you recommend to the program?
7. Would you recommend the program to others? Why or why not?
8. Is there anything else you would like to share with the research team?