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Delivering acceptance and commitment therapy for weight self-stigma through guided self-help:

Results from an open pilot trial

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Highlights

- Tested a guided self-help ACT program for self-stigma with 13 obese participants

- Found high acceptability and engagement in the guided self-help intervention

- Significant improvements in weight self-stigma, health behaviors, and mental health

- Significant improvements in ACT processes of change

- Almost all treatment effects persisted at 3 month follow up

Abstract

Weight self-stigma is a promising target for innovative interventions seeking to improve outcomes among overweight/obese individuals. Preliminary research suggests acceptance and commitment therapy (ACT) may be an effective approach for reducing weight self-stigma, but a guided self-help version of this intervention may improve broad dissemination. This pilot open trial sought to evaluate the potential acceptability and efficacy of a guided self-help ACT intervention, included coaching and a self-help book, with a sample of 13 overweight/obese individuals high in weight self-stigma. Results indicated a high degree of program engagement (77% completed the intervention) and satisfaction. Participants improved on outcomes over time including weight self-stigma, emotional eating, weight management behaviors, health-related quality of life, and depression. Although not a directly targeted outcome, participants improved on objectively measured weight, with an average of 4.18 pounds lost over 7 weeks, but did not improve on self-reported weight at 3 month follow up. Processes of change improved over time, including psychological inflexibility, valued action and reasons to lose weight. Coaching effects indicated greater retention and improvements over time with one coach vs. the other, suggesting characteristics of coaching can affect outcomes. Overall, these results provide *preliminary* support for the acceptability and efficacy of a guided self-help ACT program for weight self-stigma. Implications of these results and how to address clinical challenges with guided self-help are discussed.

Keywords: Acceptance and Commitment Therapy; Guided Self-help; Obesity; Weight Self-Stigma; Bibliotherapy

Delivering acceptance and commitment therapy for weight self-stigma through guided self-help:

Results from an open pilot trial

Overweight and obesity are significant public health problems in the United States, affecting nearly 70% of American adults (Ogden, Carroll, Kit, & Flegal, 2014). Although substantial treatment development work has led to behavioral weight loss programs that can produce weight loss (around 7-10% of weight) and health improvements (MacLean et al., 2015), most patients achieve their maximum weight loss by 6 months and then gradually regain the lost weight over time (Loveman et al., 2011). Novel approaches are needed to address these challenges, while also expanding the focus beyond only weight loss to improving health behaviors and psychosocial functioning.

One promising variable for treatment development that has been largely ignored to date is weight-related stigma. The stigma of obesity is pervasive (e.g., workplace, education, relationships, health care) and associated with a myriad of poor psychosocial outcomes such as depression, anxiety, binge eating, and reduced dieting/exercise (e.g., Carr & Friedman, 2005; Puhl & Heuer, 2009; Puhl & Heuer, 2010).

It is common for obese individuals to internalize this powerful social stigma (i.e., agreeing with and applying stigmatizing attitudes to oneself), which is often referred to as weight self-stigma (Lillis, Luoma, Levin, & Hayes, 2010). Research indicates that the consequences of stigma on distress, quality of life, and health behaviors affecting weight may become more severe when they are internalized (e.g., Carels et al., 2009; Friedman et al., 2005; Lillis, Levin, & Hayes, 2011). For example, one study found that weight self-stigma was strongly associated with poorer health-related quality of life and accounted for the relation between BMI and poor quality of life (Lillis et al., 2011). Another study with a sample of overweight and obese adults (n=46)

participating in an online, 18-week behavioral weight loss program, found that baseline weight self-stigma stigma predicted poorer self-monitoring, greater caloric intake, lower energy expenditure and exercise, less weight loss, and higher program attrition (Carels et al., 2009). Thus, weight self-stigma is an important source of distress among obese individuals that negatively impacts both quality of life and health behaviors.

Although weight self-stigma is a promising intervention target for improving psychological and physical health, it may not improve through standard weight loss interventions. Obese people who lose the expected 10% of their body weight as the result of a successful weight loss intervention are likely to remain in the overweight, or even obese range (e.g., losing 22 pounds to drop from 220 pounds to 198 pounds). This means that they will likely continue to experience chronic exposure to stigmatization and to engage in self-stigmatization, which could lead to negative changes in lifestyle behaviors that result in weight regain. Given this, it makes sense to research ways to help obese individuals cope with a chronically stigmatizing environment in ways that also allow them to make or maintain healthy lifestyle changes. To date, there has been only one known RCT designed to address coping with stigma in a weight control population (Lillis et al., 2009), which used acceptance and commitment therapy (ACT; Hayes, Strosahl & Wilson, 2011).

ACT is a contextual cognitive behavioral therapy that appears promising for treating weight self-stigma and other weight-related issues (Lillis & Kendra, 2014). This approach uses a combination of acceptance, mindfulness, values, and traditional behavior change methods to increase psychological flexibility- the capacity to engage in meaningful, effective behaviors while being willing to experience whatever psychological experiences arise as a result. With regards to weight issues, randomized controlled trials have found ACT to be effective for weight

loss (Forman et al., 2013; Lillis et al., 2009), preventing weight gain (Katterman et al., 2014),

increasing physical activity (Butryn et al., 2011), and decreasing disordered eating behaviors

(Weineland et al., 2012).

Most of these applications of ACT focused on health behaviors and weight management,

but one tested ACT specifically for weight self-stigma (Lillis et al., 2009). A sample of 84

patients who completed a weight loss program were randomized to receive a one-day ACT

workshop targeting weight self-stigma or a waiting list. Results indicated that those receiving

ACT improved on weight self-stigma as well as quality of life, psychological symptoms, and

weight. Furthermore, the treatment effects were mediated by the key mechanism of change,

psychological flexibility. Additional clinical research with other populations also suggests ACT

may be effective in reducing self-stigma and related outcomes with stigmatized areas such as

addictions (Luoma et al., 2012), same-sex attraction (Yadavaia & Hayes, 2012), and HIV-related

stigma (Skinta et al., 2015). Thus, ACT appears promising in targeting a novel and essential

treatment target for overweight and obese individuals.

From the perspective of ACT and psychological flexibility theory, weight self-stigma

leads to problems due to a combination of cognitive fusion with stigmatizing thoughts (i.e.,

excessive entanglement in the literal, evaluative functions of stigmatizing thoughts) and

experiential avoidance related to stigma (i.e., actions that seek to avoid, escape, or otherwise

control inner experiences such as self-judgments). This combination of relating to stigmatizing

thoughts as literally true and focusing one's actions on avoiding associated discomfort leads to a

variety of maladaptive patterns (e.g., avoiding situations where one "feels fat," brief spurts of

health behavior change in order to "stop looking so disgusting" followed by giving up on health

behaviors because "what's the point, I'll always be fat"). ACT teaches mindfulness-related

strategies including cognitive defusion (i.e., relating to stigmatizing thoughts as just thoughts) and acceptance (i.e., being willing to experience aversive inner experiences without defense) to reduce the dominance and unhelpful functions of self-stigma. Concurrently, ACT seeks to help clients identify alternate guides for behavior by clarifying personally relevant values and building meaningful patterns of activity through committed actions. Through these processes clients engage in more valued actions previously avoided due to weight self-stigma (improving quality of life) and more effectively engage in sustainable health behaviors through their link to values. In summary, ACT seeks to increase psychological flexibility with weight self-stigma to reduce its maladaptive impact on quality of life and health behaviors, while simultaneously establishing more effective long-term guides for enhancing relevant domains of life.

To-date, ACT has been only applied to self-stigma in the context of face-to-face therapy. However, given the prevalence of weight stigma (Puhl & Heuer, 2010), there is a need for cost effective methods that can be more broadly scaled to reach those who might benefit. Self-help interventions (e.g., books, mobile apps) provide an ideal means for cost effective, broad dissemination (Kazdin & Blase, 2011), in a format that may possibly be preferable to highly stigmatized individuals uncomfortable seeking in-person therapy. That said, research has clearly found that treatment adherence and outcomes are greater with guided self-help, rather than stand-alone self-help, in which a coach/therapist provides some level of support and ongoing contact (Andersson, in press). This implementation method might be done in the context of therapy (e.g., as an adjunctive service providing content not otherwise covered in therapy) or as a lower intensity service (e.g., stepped care, paraprofessional phone coaching). A promising direction would thus be to evaluate ACT as a guided self-help intervention for weight self-stigma.

This study reports the results of a pilot open trial examining the potential feasibility and efficacy of a guided self-help ACT intervention for weight self-stigma. A sample of 13 overweight/obese individuals struggling with elevated weight self-stigma were recruited into a 7-week program. The program included a self-help ACT book for weight self-stigma called *The Diet Trap* (Lillis, Dahl & Weineland, 2014) as well as weekly phone coaching and online quizzes. Assessments were completed at baseline, post treatment, and 3-month follow up on a range of stigma, health, and psychological outcomes. In this study, we hypothesized that participants would improve on weight self-stigma as the primary outcome as well as a variety of other health behaviors, psychosocial functioning variables, and ACT-targeted processes of change. We also hypothesized the program would be feasible as indicated by a high degree of participant satisfaction and adherence to the intervention components. If successful, this study could highlight an efficient and cost effective method for implementing treatment for a promising weight-related target among obese and overweight clients.

Methods

Participants

The total sample comprised 13 overweight/obese individuals struggling with weight self-stigma. Inclusion criteria included BMI of 27.5 or greater, current struggle with weight self-stigma as defined by an elevated score of 36 or higher on the Weight Self-Stigma Questionnaire (WSSQ; Lillis et al., 2010), previous participation in weight loss programs (i.e., any professional-led or mutual/self-help program for weight issues), and between 18 and 70 years old. Exclusion criteria included current participation in weight-loss program, current pregnancy, current experience of chest pain, dizziness, and/or cardiovascular disease, and serious psychological disorder. These criteria were chosen with the aim of recruiting individuals who

were struggling with weight self-stigma and had previous attempts in losing weight while excluding individuals who may be at risk for significant physical or mental health diagnoses. A cutoff score of 36 was used for the WSSQ because it was the mean for obese individuals from a weight loss clinic who participated in an ACT workshop for self-stigma and one standard deviation above the mean for an obese, non-treatment seeking population (Lillis et al., 2010).

Of the 23 individuals expressing interest in the study, 15 were deemed eligible based on a phone screening and 13 enrolled in the study (see Figure 1). Three participants dropped out of the study within the first three weeks of using the self-help book (two participants had family crises, one participant stopped after baseline for unclear reasons). These 3 dropouts were excluded from reported analyses, leaving a final sample of 10 participants.

Of the 10 participants, 90% were female and 90% were White (1 participant was Asian American). Participants were 35.10 years of age on average (SD = 12.63, Range = 18-60). The average BMI was 34.11 (SD = 5.21, Range = 27.5 – 42.4), with participants reporting being at this weight (give or take 5 pounds) for 13.20 months on average (SD = 17.36, Median = 11.00). The most frequent past weight loss strategies included integrating exercise outside a structured class (80%), following a diet program (80%), commercial weight loss program (70%), exercise classes (70%), limiting/changing diet outside a program (70%), meeting with a dietician (50%), meeting with a physician (50%), and prescription medications or over-the-counter diet pills (50%). Only one participant (8%) reported previous bariatric surgery.

Procedures

Recruitment occurred from October 2014 to November 2015 through letters sent to medical providers, flyers posted around surrounding community areas (e.g., grocery stores,

churches, university), and announcements made in classes at the local university. Interested

individuals contacted the program coordinator over phone to determine study eligibility.

An in-person baseline assessment was completed with each participant. Participants first

completed informed consent and then a series of self-report questions on a computer (using the

online Qualtrics survey platform). Participants were then weighed by a research assistant using a

scale while wearing light indoor clothing and no shoes. As the last step of the in-person

appointment, participants were oriented to the use of the self-help book by their assigned phone

coach and completed an initial 30-minute coaching introduction session.

Participants then completed the guided self-help program for the following 7 weeks.

After 7 weeks, a second in-person assessment session was completed. During the post

appointment, participants first completed an assessment on the computer and then the same

weighing task as baseline. Afterwards, participants had a final meeting with their phone coach to

debrief their experiences with the guided self-help program. A final, 3-month follow up

assessment was completed online (not in-person) using the same computerized survey platform

as baseline and post. All study procedures were reviewed and approved by the university's

Institutional Review Board.

Guided Self-Help Intervention

The intervention included the following activities over seven weeks: completing an in-

person orientation meeting, reading a self-help book, completing journaling exercises,

completing weekly quizzes based on a reading schedule, and completing weekly coaching calls.

Each of these components are reviewed in detail to both clarify the procedures as well as to

highlight how clinicians might implement guided self-help with clients.

Diet Trap Self-Help Book. The seven-week guided self-help intervention was structured around *The Diet Trap* (Lillis, Dahl & Weineland, 2014), a self-help book that uses ACT for weight issues and focuses particularly on problems with weight self-stigma. Participants were given a copy of *The Diet Trap* during their in-person orientation appointment and asked to read one chapter (of seven) each week. A journaling tool was also provided in a printed and/or electronic format (based on participant preference), which listed the journaling-based exercises from each chapter and provided space to write. This journaling tool was provided to increase adherence to the book's main exercises, which frequently involved writing, but for which space was not provided in the book itself.

An outline of the main content covered in each chapter is listed in Table 1. Rather than targeting weight as the problem, *The Diet Trap* addresses emotional and psychological factors underlying unhealthy eating and sedentary behavior through the use of mindfulness, acceptance, and values processes. Specifically, the book uses educational components, metaphors, self-guided imagery exercises, and a liberal use of journaling to establish and support an alternative health behavior change agenda that is focused broadly on making healthy choices consistent with personal values while simultaneously undermining a narrow focus on weight loss and weight change as a means to influence unwanted cognitive and emotional experiences. Chapters are devoted to teaching mindful self-compassion, decoupling stigmatizing thoughts from behavior, clarifying health values, accepting unwanted emotions for the purpose of empowering behavior change, and committing to larger and larger patterns of values-consistent behavior.

Quizzes and Reading Schedule. Participants were also asked to complete brief online chapter quizzes each week to track comprehension of concepts and ongoing engagement in the program. One limitation of self-help books relative to online/mobile platforms is that they do not

provide any built in feature to automatically track progress. Ideally a clinician/coach would want to be able to objectively track ongoing completion of the self-help books. Online quizzes provide a format for doing so. If a client fails to complete a quiz, that might indicate a participant fell behind on reading the book, triggering a coach check-in to address adherence. Similarly, if a client gets a low comprehension score on the quiz, that can trigger a check-in to address either adherence (if they just guessed on the quiz) or to address comprehension issues.

This approach does add a cumbersome step outside of reading the book. However, this can be addressed by providing very clear instructions such as a printed schedule with specific dates for reading chapters and completing quizzes (along with the website link). This additional structure also may help to clarify the reading schedule and expectations for weekly activities.

Coaching Overview. The guided component of the program was completed by two clinical psychology doctoral graduate students with extensive training in ACT. Each participant was assigned by chance to one of the two coaches (coaches alternated every other participant), who then followed the participant throughout the study. The coaching protocol was standardized to help ensure consistent coaching across participants and coaches.

The primary goal of coaching was to support adherence to all of the program components (i.e., reading, try exercises from the book, quiz completion). A secondary goal was to support strengthening and generalization of concepts and skills covered in the book. Although coaches held a supportive stance towards participants, they did not provide adjunctive ACT therapy nor did they introduce other ACT concepts/skills that were not provided in the book.

Coaches followed a protocol adapted from another guided self-help manual (Duffecy et al., 2011), which focused on using a supportive accountability approach to increasing adherence to self-help materials (Mohr, Cuijpers & Lehman, 2011). This approach seeks to hold individuals

accountable for completing the self-help program, but doing so in a context that feels supportive

rather than aversive. This is primarily achieved through establishing a social context in which

there is an individual who is monitoring engagement, fostering motivation, reinforcing ongoing

adherence, and problem solving non-adherence issues. Other key concepts of supportive

accountability were also followed in the protocol including providing clear expectations for the

program and coaching, providing choice when possible, and collaboratively setting goals for

engaging in self-help. Examples of how supportive accountability was brought to bear in

coaching interactions and strategies are illustrated as we describe the coaching procedures (i.e.,

in-person orientation, weekly calls, final in-person session).

　　　　Coach Orientation Meeting. Participants first met with their coach at the end of the in-

person, baseline appointment for approximately 30 minutes. This first meeting sought to increase

motivation and commitment to engage in the program, establish expectations for the program,

and begin to address potential non-adherence issues.

　　　　The coach sought to increase motivation to participate by eliciting the participants'

reasons and goals for participating in the program. Examples of eliciting questions include "Why

did you decide to participate in this program?" "What challenges have you encountered with

your weight?" and "If this program were to work exactly the way you hope, what would your life

be like 6 months from now?" Consistent with a motivational interviewing (Miller & Rollnick,

2012) approach, the coach tried to elicit change talk as much as possible including desire, ability,

reasons, and need for change, but with an emphasis on personal values. In some cases,

participants reported ACT-consistent goals related to valued living (e.g., "to be an example to

my children of a healthy lifestyle," "to get healthy enough to enjoy playing with my

grandchildren"), which could be directly linked back to *The Diet Trap*. However, participants

were more likely to begin by reporting goals consistent with weight self-stigmatization or experiential avoidance (e.g., "I am ashamed/disgusted with what I look like," "so I don't look and feel so huge next to my husband"). In these cases, coaches did not directly challenge these goals, but looked for how they might be connected back to personal values (e.g., "If you were thinner and felt better about yourself, what else might be different in your life? What would you be doing that you are not doing now?") or simply acknowledge this goal while prompting for additional goals more directly connected to personal values (e.g., "That is a common goal people have in starting out. What other goals might you have? What about things you might want to be doing differently in your life?"). The coach summarized these reasons at the end and sought to link them back to the guided self-help program participants would be completing.

The coach then provided an overview of the program in order to clearly communicate expectations. This is very important from a supportive accountability perspective as it ensures participants know what they need to do to be successful, what the coach is expecting (i.e., what they are being held accountable for doing), and what they can expect from the coach in return (i.e., reciprocity for engaging in the program). This included a review of the structure and components of the program (reading, journaling, coaching, and quiz completion each week) and clarifying what to expect from the book (e.g., "The book will introduce you to new strategies for approaching difficult thoughts and feelings as well as identifying what you want to be doing more in your life," "the book includes a heavy emphasis on exercises to try out and practice"). It was especially important that the coaching role and procedure is fully clarified with participants. This includes that coaching calls are not to provide therapy, that coaching is to help apply what they learn in the book to their life and to give support in continuing with the program, and that coaching calls will be 5-10 minutes each week.

Coaches then began a process of collaboratively identifying and problem solving

potential non-adherence issues. Questions were used to assess both psychological barriers

("Some people have concerns about what it means to get help for weight or feeling guilty about

taking time for themselves or doubts about whether it will help. Do any of these apply to you?")

and practical barriers ("What might make it hard for you to participate even if you wanted to?").

Once these barriers were identified, coaches helped collaboratively identify solutions (e.g., "what

are your thoughts about how to address these barriers?").

From a supportive accountability approach (Mohr et al., 2011), it is important that

clients' intrinsic motivation for participation is supported by providing as much choice as

possible. One place to do this was to note the typical pattern for completing the program (e.g.,

reading a chapter a week, completing a coaching call in 7 days), but then asking participants

what goal they want to set for themselves for using the book and completing coaching.

Commitment to this goal and to continuing in the program was solidified by linking it back to

their stated motivations for participating (e.g., "how might this fit with what you were telling me

about wanting to take better care of yourself and to be a role model for your family?").

Weekly Coaching Calls. For the following seven weeks, participants were asked to

complete weekly, 5-10 minute phone coaching calls. These coaching calls sought to continue to

elicit motivation and commitment to the program, reinforce adherence, address issues of non-

adherence and support understanding and applying concepts from the book to daily life.

Calls began by assessing whether the participant completed their goal for reading the

book as well as completing associated exercises and journaling. The coach sought to reinforce

any successful adherence through a combination of praise (e.g., "that's fantastic you have been

keeping up with the book") and, more importantly, linking adherence back to personal goals

(e.g., "what was the most useful thing you learned? Why was that helpful?"). The coach then explored any questions about materials and how to apply them (e.g., how to apply acceptance and defusion skills from the book with an upcoming beach vacation). Coaching sessions ended by collaboratively identifying a reading goal for the next week, identifying any potential barriers to this goal, and eliciting commitment to the goal.

Addressing non-adherence is one of most critical aspects of guided self-help (Mohr et al., 2011), which was primarily done during the coaching calls. When non-adherence occurred (e.g., not reading the full chapter, not doing the exercises in the chapter), coaches returned to the participants' goals (e.g., "Let's take a step back and explore why this might matter anyway. What is important to you about doing this program?"). Barriers to adherence were then identified (e.g., "What got in the way of reading the book this week?"). The coach then helped participants identify solutions (e.g., "What could you do to remember to read the book?" "So this book might help you work on these meaningful goals, but you also aren't sure if it will work. Given that, what do you want to do?"). As elsewhere in the protocol, the coach tried to help clients choose a solution, elicit motivation for this solution, and commit to a specific goal to adhere to the book.

One common source of non-adherence is participants feeling too busy (e.g., "I didn't have enough time to read this week"). When this occurred, coaches focused on eliciting motivation for participating in the program that might make it worth reading above all of the other demands of the week (e.g., "It sounds like you're really busy. Let's take a few minutes again to explore your goals for this program and what you are hoping to achieve"). To help build momentum with adherence, coaches then helped participants commit to a smaller, more feasible goal, such as reading just a few pages or completing a single exercise (e.g., "one thing people find helpful is to pick a smaller goal that's easier to fit into the week. Is there a specific number

of pages or exercise you want to try to set as a goal?"). Coaches also explored whether there were other reasons for non-adherence since "I'm too busy" is a more socially acceptable response than "I didn't like the book" (e.g., "I'm wondering if there are other challenges you are running into as well– such as being unsure if it will help you?").

Although coaching calls covered several key functions and there was a lot of opportunity for extended conversations, coaches explicitly sought to keep calls relatively brief. Strategies included keeping explanations brief, avoiding long ACT metaphors, and avoiding more extended therapeutic interactions. Typical therapeutic skills were used to manage time (e.g., "that sounds like a tough situation. Were you able to use your ACT skills to address it?" "I'm noticing the clock and we are about out of time. Any other pressing issues before we end?").

Participants were also offered the option half way through the program (after three weeks) to complete briefer phone calls if they wanted to. These were offered to high engagers who may not need the more in depth phone calls, or those who were not adhering to the study (and for whom phone calls may be shame inducing and unsuccessful in increasing adherence). Of note, no participants chose to reduce phone calls when offered this option, suggesting the format was acceptable and valued. That said, offering this choice is still valuable from a motivational perspective and we would recommend those implementing such protocols be mindful of opportunities for clients to make choices with the format/structure of the program.

Final In-Person Session. A final in-person meeting occurred with the coach at the end of the post assessment. This meeting lasted for approximately 10-20 minutes. During the meeting, the coach sought to help debrief the participant, discuss any treatment maintenance issues, and support relapse prevention. Key topics included: "What was helpful for you in the program? What did you learn?" "What things were less helpful or otherwise didn't work well for you?"

"How can you continue to apply what was useful to you from here?" "Are there skills you had

trouble with that you want to keep developing? Areas you want to work on applying these skills

to?" and "If you start struggling again, what can you do to help apply the skills you learned in the

program?" After that meeting, participants had no further coaching contact from the coach.

Outcome Measures

The primary outcome for this study was weight self-stigma. Secondary outcomes

included eating behaviors, use of effective weight control strategies, health-related quality of life,

depression, and weight. All outcome measures were assessed through computerized surveys

administered at baseline, post intervention, and 3-month follow up. Weight was also objectively

measured in the laboratory at baseline and post, but not follow up (which was completed online).

Weight Self-Stigma Questionnaire (WSSQ; Lillis et al., 2010). The 12-item WSSQ was

used as the primary outcome measure of weight-related self-stigma. This scale yields a total

score as well as two subscales: self-devaluation and fear of enacted stigma (i.e., fear of being

stigmatized by others due to obesity). Items are rated on a 5-point scale ranging from 1

"completely disagree" to 5 "completely agree." Prior studies have found the WSSQ to have good

reliability and validity (Lillis et al., 2010) and sensitivity to ACT treatment effects (Lillis et al.,

2009). The WSSQ had adequate internal consistency in the current study, $\alpha = .81$.

Dutch Eating Behavior Questionnaire-Emotional Eating (DEBQ-EE; Van Strien et al.,

1986). The 13-item Emotional Eating subscale from the DEBQ was used to assess emotional

eating. Items are rated on a 5-point scale ranging from "never" to "very often" in relation to

desires to eat under specific emotional states (e.g., feeling "lonely," "irritated," "upset").

Previous studies have found the DEBQ-EE to have adequate reliability and validity (Van Strien

et al., 1986). The DEBQ-EE had adequate internal consistency in the current study, $\alpha = .94$.

Weight Control Strategies Scale (WCSS; Pinto et al., 2013). The 30-item WCSS assessed

behaviors related to weight-loss and weight management. Subscales include assessing dietary

choices, self-monitoring strategies, physical activity and psychological coping. Items are rated on

a 5-point Likert scale ranging from "never" to "always." Prior studies have found the WCSS to

have good reliability and validity and to be sensitive to the impact of weight-loss treatments

(Pinto et al., 2013). The WCSS had adequate internal consistency in the current study, $\alpha = .81$.

Global Health Scale (GHS; Hays et al., 2009). The 10-item GHS was used as a measure

of health-related quality of life. The GHS was developed as part of the Patient-Reported

Outcomes Measurement Information System (PROMIS) supported by the National Institutes of

Health. The GHS assesses overall physical and mental health functioning as well as an overall

quality of life score. Previous studies have shown the GHS to be a reliable and valid measure of

health-related quality of life (Hays et al., 2009). The GHS had somewhat low, but marginally

adequate internal consistency in the current study, $\alpha = .70$.

Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer & Williams, 2001). The PHQ-9

is a 9-item measure of depression. Frequency of depressive symptoms are rated over the past 2

weeks using a 4-point Likert scale ranging from "not at all" to "nearly every day." This measure

has been found to be a reliable and valid measure in previous studies (e.g., Kroenke et al., 2001).

The PHQ had adequate internal consistency in the current study, $\alpha = .82$.

Weight. Weight was objectively measured with participants wearing light clothing (e.g.,

no shoes or heavy jackets) and stepping on a digital scale in the laboratory under supervision of a

research assistant. Weight was documented during the baseline and post assessments completed

in the laboratory. Participants were also asked to provide their self-reported weight in pounds on

the baseline, post, and follow up assessments. Although weight was not measured objectively at

follow up, reducing the validity of the assessment, this was justifiable as weight was only a

secondary outcome and largely de-emphasized in this protocol.

Process Measures

All process measures were assessed through online surveys administered at baseline, post

intervention, and 3-month follow up.

Acceptance and Action Questionnaire for Weight (AAQW; Lillis & Hayes, 2008). The

AAQW is a 22-item measure of psychological inflexibility and experiential avoidance around

weight-related thoughts and feelings. In other words, the degree to which such weight-related

thoughts and feelings rigidly guide behavior (particularly avoidance behaviors) and dominate

one's experiences at the expense of more effective or meaningful patterns of action. Items are

rated on a 7-point scale ranging from never true" to "always true." The AAQW has been found

to be a reliable and valid measure in past studies (e.g., Lillis & Hayes, 2009; Lillis, Levin et al.,

2011) and to be sensitive to ACT treatment effects (Lillis et al., 2009). The AAQW had adequate

internal consistency in the current study, $\alpha = .83$.

Valuing Questionnaire (VQ; Smout et al., 2014). The VQ is a 10-item measure of valued

action, with subscales assessing obstruction (i.e., how much barriers got in the way of valued

action) and progress in valued action (i.e., engaging in meaningful patterns of activity). Items are

rated on a 7-point scale from "not at all true" to "completely true." The VQ is a new measure,

but preliminary research indicates adequate reliability and validity (Smout et al., 2014) as well as

sensitivity to ACT self-help intervention effects (Levin et al., in press). The VQ had marginally

adequate internal consistency in the current study (obstruction $\alpha = .77$, progress, $\alpha = .61$).

Motivating Factors for Weight Loss (MFWL; LaRose et al., 2013). An adapted 15-item

MFWL explored reasons for weight-loss efforts including health, appearance, social pressure,

and social functioning. The MFWL was originally developed as part a large scale

epidemiological study on weight-related issues and has been found to predict weight-related

outcomes (LaRose et al., 2013). The items were modified to include more reasons linked to

weight self-stigma (e.g., "wanting others to approve of you," "you would feel bad about yourself

if not") and valued action (e.g., "consistent with your goals").

Satisfaction/Adherence Measures

Satisfaction data was collected through online surveys at post and follow up. Additional

feasibility data was collected through online quizzes during the 7-week intervention period.

Program satisfaction and engagement. A series of items assessed satisfaction with and

engagement in various aspects of the program including reading the *Diet Trap* book, completing

journaling exercises, and coaching phone calls. Each item was rated on a 6-point scale from 1

"strongly disagree" to 6 "strongly agree" such that a score of 4 "slightly agree" or higher

indicates positive satisfaction, while a score of 3 "slightly disagree" or lower indicates

dissatisfaction. These items were based on similar satisfaction questions used in previous guided

self-help studies (Levin et al., 2015) and were completed during post and follow-up time points.

Weekly Diet Trap Chapter Quizzes. Participants were asked to complete weekly online

quizzes for each chapter of the book during the intervention period. The quiz format and

development approach was based on those created for previous self-help ACT studies (e.g.,

Levin et al., 2015). This included having multiple researchers review each chapter, create a bank

of potential quiz questions, and collaboratively select questions that assess key ACT concepts for

each chapter. Each quiz contained five multiple choice questions assessing book content and two

questions assessing amount read and engagement. Participants received evaluative feedback after

each quiz completion. These quizzes served as a measure of feasibility in terms of ongoing

adherence to reading the book (quizzes were conducted in relation to completing book chapters) as well as comprehension of the book's content.

Data Analysis Plan

All analyses were conducted with the 10 study completers and excluding the 3 additional participants who dropped out of the study (both the intervention and assessments) after completing less than half of the intervention. These 10 participants all completed the post assessment and 9 out of 10 completed the 3-month follow up (the remaining participant completed only a portion of the follow up assessment, but missing data was modeled using mixed model repeated measures analyses).

Feasibility of the program was examined in terms of whether individuals high in weight self-stigma would find a guided self-help intervention acceptable and would reasonably adhere to the intervention components. Descriptive statistics were examined to assess the satisfaction with the guided self-help program and adherence (e.g., number of quizzes completed, self-reported reading of the book). Responses to open ended questions were reviewed for themes related to experiences in the program and understanding of program content. Additional clinical lessons learned were identified from reports made by the two coaches.

Mixed model repeated measures analyses (MMRM), using unstructured covariance models, examined pre to post to follow up changes on outcome and process measures. One advantage in using this analytic approach is that it can model change for each participant even with missing data, such as for the one participant that did not complete follow up. Thus, MMRM was run with all 10 participants and modeling the missing data for the one participant who did not complete follow up. The primary outcome analysis tested whether participants reported reductions in weight self-stigma (WSSQ) over time. Secondary outcome analyses using MMRM

examined improvements over time in emotional eating (DEBQ-EE), use of key behaviors related to weight management (WCSS), health related quality of life (GHS), depression (PHQ-9), and self-reported weight. Process of change analyses with MMRM similarly examined changes over time on psychological inflexibility (AAQ-W), values (VQ), and reasons for weight loss (MFWL). Cohen's d effect sizes were calculated for MMRM post hoc comparisons of within group contrasts using recommended procedures (e.g., Verbeke & Molenberghs, 2000). Since objectively measured weight from the laboratory was only assessed at pre and post and there was no missing data, these analyses were conducted using paired sample *t*-tests.

Finally, a series of analyses examined whether results differed for participants based on assigned coach. Given participants were randomly assigned to coaches, this allowed a preliminary examination of whether the coach affects treatment outcomes (which among other implications, might suggest that coaching has an active impact and is not an inert variable). Chi square analyses compared rates of dropout between coaches. Independent sample *t*-tests compared whether self-reported program engagement or satisfaction differed between coaches. MMRM analyses examined whether the coach variable significantly interacted with changes over time on outcome and process measures.

Results

Program Engagement

Overall, 3 of 13 participants (23%) dropped out during the intervention (two at week 3 and one at week 1 of the intervention). Additional program engagement data was examined for the 10 participants (77%) who completed the post assessment.

Chapter quiz data showed a strong degree of program engagement with 9 out of 10 participants completing all 7 quizzes (one participant completed 71% of quizzes). Participants

scored high on quizzes (M = 93% correct, SD = 8%), indicating a consistently high level of

understanding of the book content. All 10 participants regularly completed weekly phone

coaching calls, with an average of 6 phone coaching sessions per participant.

Participants reported reading the entire book (100% of participants read between 95%-

100% of the book) and that they read the book carefully (M = 5.30, SD = .68, 90% rated a 5

"quite a lot" or 6 "very much"). Participants reported completing between 60% and 100% of the

exercises in the book (M = 83.80, SD = 15.02, 50% of participants completed 90% or more of

exercises). Participants reported engaging 4 "moderately" or 5 "quite a lot" in the book exercises

(M = 4.60, SD = .52). In terms of book journaling exercises, participants reported writing

between 3 "sometimes" to 5 "very often" (M = 3.80, SD = .63), with a total of 6 to 60 pages

written over the 7 week period (M = 22.40, SD = 15.75). Thus, overall participants reported at

post a high level of engagement in the Diet Trap program. However, these feasibility findings

should be interpreted somewhat more modestly in the context of 23% dropping out of the

program and thus not being accounted for in this satisfaction/adherence data.

Program Satisfaction

Descriptive statistics were examined for program satisfaction variables assessed at post

(see Table 2). Results indicated consistently high satisfaction ratings with mean scores ranging

between 5.10 and 5.80 (with 5 indicating "mostly agree" and the maximum score of 6 indicating

"strongly agree"). All ratings were 4 "slightly agree" or higher with the exception of one rating

at 3 "slightly disagree" for the journaling tool.

In addition, one item was reversed such that higher scores indicated lower satisfaction

with phone coaching ("the book would have been just as helpful without any phone coaching").

This item indicated that most participants disagreed with the statement that the phone coaching was not helpful, with 60% rating 1 "strongly disagree" or 2 "mostly disagree".

Open Feedback from Participants

Additional feedback from participants was gathered through a series of open questions in the post and follow up surveys. By far, the most common issue identified when asked "what did you like least about the program?" was the intervention period needing to be longer. Forty percent of participants reported in open response questions that they would have liked more time to develop and apply the skills learned in the book as well as to complete the journaling exercises provided in each chapter. The issue appeared to be especially due to the response burden put on participants in completing all of the journaling exercises in each chapter.

Two participants noted some conflicting issues between the book's content targeting weight self-stigma and elements of standard weight loss methods included in the study and last chapter. One participant noted disliking the scale weighing at baseline and post because "I do not believe they tell the whole story of who/what you are." This may be linked to concepts presented in the book regarding shifting emphasis from weight to valued actions as well as cognitively defusing from self judgments and evaluations. The other participant noted disliking the final chapter, which covered standard behavioral weight loss methods briefly, due to a combination of it being information that was already known and because of how it conflicts with the book – "it gave me feelings of needing to go back to the fix me trap."

Finally, it is worth noting that three participants at three-month follow-up highlighted how helpful the phone coaching was as part of the program (e.g., "It was very helpful to have a weekly check-in. It kept me accountable," "I wish I had more time to make teachings in the book

a habit before my coach stopped doing the weekly check-ins." "I think if I had read the book alone, I would not have taken the time to do the exercises and they were a big part.").

Changes in Treatment Outcomes and Processes of Change

Descriptive statistics are provided for all outcome and process of change measures at each time point in Table 3. Results of the MMRM analyses are reported in Table 4. MMRM analyses indicated significant improvements over time for almost all outcomes including weight self-stigma, emotional eating, weight management behaviors including dietary choice, physical activity, and psychological coping, health-related quality of life, and depression. In each case, outcomes improved significantly from pre to post with large effect sizes ranging between .99 and 3.75. All outcomes remained significant, or at least a statistical trend, when comparing baseline to 3-month follow up with effect sizes ranging between .74 and 2.63. There were no significant differences between post and 3-month follow up, except for fear of enacted stigma, which continued to improve from post to follow up, further indicating maintenance of treatment gains over time. Two outcomes did not significantly improve over time, self-reported weight and self-monitoring behaviors for managing weight.

Additional MMRM analyses indicated significant improvements over time on processes of change including psychological inflexibility and valued action. In each case, processes improved significantly from pre to post with large effect sizes ranging between 1.68 and 2.45. All improvements remained significant at 3-month follow up relative to baseline with large effect sizes ranging between 1.69 and 2.80. There were no significant differences between post and follow up on processes of change, further indicating maintenance of treatment gains.

A paired sample *t*-test examined pre to post changes on weight measured in the laboratory. There was a statistical trend for measured weight to decrease from pre to post, $t(9) =$

2.15, $p = .06$, Cohen's $d = .34$, with an average weight loss of 4.18 pounds ($SD = 6.14$, Range = -

16.40 to 1.60). Forty percent of participants demonstrated a weight loss of 5 or more pounds over

the 7-week intervention and no participants gained 5 or more pounds from pre to post (the

greatest weight gain was 1.6 pounds).

Of note, self-reported weight did not significantly reduce from pre-post. This might have

been due to an increasing, slight bias towards over reporting weight at post (self-reported weight

was 1.40 pounds higher on average relative to objectively measured weight at post, but was .68

pounds lower than measured weight at baseline). The increasing bias in reported weight may

have been due to reductions in self-monitoring weight. Several participants reported not

weighing themselves during treatment, reflecting a shift from weight loss to values-based action.

Reasons for Weight Loss

Participants were assessed on their reasons for wanting to lose weight using a set of items

adapted from previous research (LaRose et al., 2013). Five items assessed reasons related to

weight self-stigma including "wanting others to approve of you," "you would feel bad about

yourself if not," "feeling better about yourself," "improve appearance," and "social pressure."

These items were highly correlated (Cronbach's alpha = .86) and were summed into a stigma

motivation variable. MMRM indicated that participants decreased on stigmatizing reasons over

time, $F(2, 9.17) = 5.93$, $p = .02$. Post hoc analyses indicated scores significantly decreased from

baseline to post (M difference = 4.80, $SE = 1.41$, $p = .01$, Cohen's $d = 1.07$) and from baseline to

follow up (M Difference = 4.14, $SE = 1.38$, $p = .01$, Cohen's $d = .97$), but scores were equivalent

from post to follow up ($p = .50$).

Five items assessed reasons for losing weight related to personal goals and health

including "health concerns," "improved energy," "wanting to take responsibility for your own

health," "consistent with your goals" and "improved work performance." These items were less correlated, but had adequate internal consistency (Cronbach's alpha = .72) and were summed into a health/goals motivation variable. MMRM analyses indicated that the health/goals motivation variable did not significantly improve over time.

In order to further assess motivation for losing weight, a free-response item was included at all three time points ("what is your number one reason for trying to lose weight at this time?"). At baseline, six out of the ten participants reported reasons that were consistent with psychological inflexibility and weight self-stigma (e.g., "disgusted with what I look like," "I feel unattractive," "To feel better about myself") while only four participants connecting weight loss to values or a desire to improve overall physical health (e.g., "example to my children," "I want to get healthy"). By post, all ten participants endorsed a more psychologically flexible perspective that linked weight loss to personally-held values and/or overall physical health (e.g., "become a stronger person," "so I can be healthy, happy, and fulfill my goals." "put my life in line with my values," "able to enjoy my children/grandchildren and spend quality time with them"). Thus, it appears that motivation shifted from avoiding/controlling difficult inner experiences, particularly weight self-stigma, to flexibly moving towards improving physical health and the values they found meaningful.

Coaching Effects

Independent sample *t*-tests indicated no significant differences on satisfaction, engagement in the book or chapter quizzes between coaches. However, a chi square analysis identified a statistical trend for higher rates of dropout with Coach A (3 out of 7 dropped out) relative to Coach B (0 out of 6 dropped out), $\chi^2 = 3.43$, *p* = .07.

MMRM analyses examined time by coach interactions to see if participants had different trajectories of improvements over time depending on assigned coach. Time by coach interactions were found for psychological inflexibility (AAQ-W), $F(2, 7.80) = 5.09$, $p = .04$, valued action progress (VQ progress), $F(2, 8.36) = 12.99$, $p = .003$, mental health (GHS-mental health), $F(2, 6.84) = 8.28$, $p = .02$, and a trend for health-related quality of life (GHS), $F(2, 7.46) = 3.59$, $p = .08$. There were significantly greater improvements in inflexibility, values progress, and mental health over time among participants assigned to Coach B relative to Coach A. Of note, there were no coach effects on most outcomes including weight self-stigma and health behaviors

Clinical Lessons Learned from Coaches

Although coaches received a standardized protocol, a number of variables may account for differences found including how the protocol was implemented, competency level, drift from the protocol, or personal characteristics. Feedback from the two coaches was elicited to further identify key challenges in providing guided self-help, strategies to overcome these issues and potential explanations for the greater retention and outcomes from Coach B relative to Coach A.

Both phone coaches reported that maintaining one's role as a coach and refraining from conducting therapy over the phone was the most common challenge during weekly coaching sessions. Following the coaching protocol felt artificial and even disingenuous at times to the coaches, especially when participants began discussing significant life struggles. On these occasions, the coaches often felt the urge to provide more direct therapeutic support, but did not do so given the protocol and aims of the study. One advantage of this approach is that it helps ensure health professionals without therapy training could potentially provide coaching (e.g., a nurse, health coach, etc..). If a clinician is the one providing guided self-help and not restricted to a research protocol this barrier may be less relevant. However, it is unclear whether allowing the

flexibility to provide therapy during guided coaching calls would augment effects or even

possibly detract (by taking time away from providing supportive accountability for the book).

For example, it is worth noting that participants were generally satisfied with the phone coaching

experience, with only one participant requesting more direct therapeutic support at post.

Other coaching challenges included maintaining boundaries on phone call length and

flexibility with rescheduling appointments. Participants were often interested in continuing

phone calls longer than the allotted 5-10 minutes. In an effort to maintain rapport while

preserving to the 5-10 minute call limit, the coaches periodically used reminders about the

remaining call time, shifted to more specific questions, and clearly noted the expected length of

the phone call within weekly emails. Although the coaches were flexible with rescheduling

appointments to ensure that treatment progressed consistently, this level of flexibility may not

always be feasible within other contexts where a clinician's schedule is set weeks or months in

advance. If these limitations are in place, it may be useful to discuss scheduling expectations

prior to enrolling the participant and request that they make a commitment during this

conversation. In contexts where weekly outside calls are simply not feasible, an alternate strategy

might be to reserve 5-10 minutes of therapy appointment time to provide supportive

accountability with regards to use of the self-help book.

Possible explanations for the stronger effects with Coach B versus Coach A were

explored. One factor was the rate of prompting participants who missed appointments. Coach B

had notable experience in providing such prompting in self-help studies and adhered to a typical

prompting approach (every few days prompting by email or phone). However, Coach A had no

prior experience with self-help research and provided more spaced prompting (up to a few weeks

between prompts). Thus, one potential lesson learned is to ensure prompting is provided frequently and regularly, which may affect ongoing adherence and outcomes from self-help.

Other possible explanations such as different levels of experience with ACT or therapy seemed less plausible given that Coach A had more therapy experience, including specifically providing ACT for health behavior change, relative to Coach B. That said, Coach A reported being more strictly adherent to the protocol by taking a harder stance with regards to redirecting conversations that shifted more into deeper discussions that approximated therapy. In contrast, Coach B reported allowing discussions of issues with greater depth, while avoiding providing active therapy. This was done by gently bringing the conversation back to skills presented in the chapter and how they could be applied to the difficult situation at hand. Thus, another possible clinical lesson is with regards to the potential importance of connecting more significant challenges and distress back to the content and skills of the self-help intervention. This is likely a key role of the coach, providing a support for generalization of skills learned in the book.

Discussion

This pilot study sought to evaluate the preliminary feasibility and efficacy of a guided self-help ACT intervention for weight self-stigma for overweight/obese individuals high in weight self-stigma. Results demonstrated strong satisfaction with, and engagement in, the program among the 10 participants who completed treatment. Preliminary support for the potential efficacy of the program was found with improvements over time on weight self-stigma, emotional eating, weight management behaviors (e.g., diet, exercise), health-related quality of life, and depression. Although not an explicit goal of this program, statistical trends were found for objectively measured weight loss. Importantly, the intervention effectively targeted putative processes of change, with significant improvements in weight-related psychological inflexibility,

valued action, and reasons for weight loss over time. Thus, overall this pilot study provides

promising initial support for using ACT to target weight self-stigma through a combination of

coaching and use of a self-help book. However, some caution in interpretation is warranted given

that 23% of the sample failed to complete the intervention and this was a small, open trial.

Clinical Implications: Targeting Weight Self-Stigma

Weight self-stigma is an important contributor to both psychological and weight

outcomes among obese individuals (e.g., Carels et al., 2009; Lillis et al., 2011). Although

substantial attention has been paid to documenting this problem (e.g., Puhl & Heuer, 2010), there

has been a notable lack of treatment development work seeking to target weight self-stigma. The

one exception is a preliminary RCT that found efficacy for ACT with weight self-stigma (Lillis

et al., 2009), upon which this study was based. Targeting weight self-stigma may help alter the

broader context in which individuals engage in weight loss and health behavior change efforts,

possibly augmenting the impact of other health behavior intervention efforts. Approaching such

changes from a stigmatizing perspective may be one of the reasons weight-related interventions

have difficulty with long term success (Loveman et al., 2011). For example, if someone diets and

exercises to "stop being disgustingly fat", then these health behavior changes may not persist

over time as the person finds they are still overweight and thus "disgusting", "unlovable", "lazy"

and so on. This may even expand problems if individuals start to then believe "I'm disgustingly

fat and I'll always be this way", which may lead to avoiding making or even considering health

behavior changes that could still contribute to quality of life and decreased health risks. This is

consistent with research showing that weight stigma increases eating (Schvey, Puhl, & Brownell,

2011) and interferes with weight loss interventions (Carels et al., 2009).

This research highlights the importance of assessing weight self-stigma among overweight and obese clients. Weight stigmatization is highly prevalent Puhl & Heuer, 2009; Puhl & Heuer, 2010) and unlikely to improve on its own through standard weight loss interventions given clients are likely to continue to be overweight or obese (MacLean et al., 2015). If identified, a clinician might consider using a guided self-help approach like *The Diet Trap* or a direct application of ACT to target weight self-stigma. Self-report measures can be used. such as the Weight Self-Stigma Questionnaire (WSSQ; Lillis et al., 2010), to identify elevated weight self-stigma. Alternatively, interview questions might be used to explore potential weight self-stigma (e.g., "What does your weight mean to you?" "Are there situations you avoid due to your weight?" "Have you ever been discriminated against due to your weight?").

ACT may provide an innovative approach to altering how individuals struggling with weight self-stigma engage in weight loss. Clients can learn how to notice stigmatizing thoughts like "I'm weak" or "I'm disgusting" as just thoughts and how to engage in meaningful activities while being willing to experience whatever stigmatizing reactions occur (e.g., embarrassment about your body while going swimming anyway). As ACT reduces the impact of stigma on one's behavior, it concurrently helps identify more meaningful and effective motivators for health behavior change through values work. For example, clients can identify how eating healthier and physical activities are linked to personal values, how they want to act towards themselves, and other meaningful life domains/activities (e.g., being able to do activities with their children). Theoretically, values work may increase long term behavior change since its linked to ongoing, positively reinforcing patterns of activity, rather than just trying to escape aversive stigmatizing states by losing significant amounts of weight. Consistent with this, the current study found motivations behind losing weight changed over time from more stigmatizing reasons to those

linked more to being healthy and values. Thus, ACT may add a crucial component to existing

health behavior change efforts with overweight/obese individuals by reducing the emphasis on

unhelpful stigmatizing reasons for weight loss and enhancing more values-based reasons.

Although this study focused on testing a self-help book, one could also directly use ACT

in therapy to target weight self-stigma. Clinicians looking to implement ACT for weight self-

stigma might start by reviewing *The Diet Trap*, to clarify how ACT can be applied to this

problem area. The ACT group protocol for weight self-stigma (Lillis et al., 2009) is available

online at https://contextualscience.org/Weight_Maintenance_Protocol as well as a related group

protocol on ACT for self-stigma among clients struggling with addictions (Luoma et al., 2012)

at https://contextualscience.org/selfstigma_and_shame_in_substance_addiction. Key topics when

applying ACT to weight self-stigma include: addressing the "fix-me trap" (i.e., experiential

avoidance) with weight loss goals, enhancing self-compassion and linking it to health behaviors,

clarifying personal values and linking them to various goals and activities (including health

behaviors, but also other key life domains), and teaching cognitive defusion and acceptance

strategies to address self-stigma, unhelpful thinking patterns, difficult emotions, and cravings.

The statistical trend for a reduction in weight raises some interesting issues with regards

to weight loss from an ACT perspective. One important note is that the *Diet Trap* explicitly

minimizes an emphasis on weight loss as a key outcome, with only the last chapter providing any

behavioral weight loss strategies and suggestions. Rather, this program focuses on increasing

patterns of activity linked to personal values (which is more directly linked to quality of life and

possibly health behaviors). This means that reductions in weight are not clearly due to direct

attempts by the intervention to influence weight. Although weight loss in an open trial is less

significant due to other unaddressed confounds (e.g., regression to the mean), this does suggest

that shifting focus on weight self-stigma and psychological inflexibility with regards to weight

may naturally lead to weight loss. The challenge this raises is how weight loss is positioned

within the explicit goals of an ACT for weight self-stigma intervention. If the primary goal is to

target weight loss and that is the primary reason individuals participate, then the intervention

may work cross purposes at times. This is not to say that weight loss cannot be a goal, but the

concern is when individuals work towards this goal in an overly inflexible way and for the

purposes of avoiding weight self-stigma and other aversive thoughts and feelings. Consistent

with this, two participants expressed concerns about study components that did emphasize

weight loss including objective weight measurement ("I've never been a fan of the scales…

simply because I do not believe they tell the whole story of who/what you are") and behavioral

weight loss strategies introduced in the last chapter of the book ("I just don't know if it was what

I wanted to hear with the rest of the book, but understood why it is in there. I feel it gave me

feelings of needing to go back to the fix me trap"). This feedback highlights how more treatment

development is needed on how to integrate weight loss goals within the context of values and

psychological flexibility, while avoiding functions related to weight self-stigma and inflexibility.

Theoretically, it may be the case that excessive focus on weight loss, particularly in the context

of weight self-stigma, might even contribute to weight regain and other weight-related problems.

Given the health risks and problems associated with obesity, weight loss is still a valuable goal,

but arguably when addressing weight self-stigma with ACT it may be more effective to instead

emphasize increases in valued health behaviors than weight loss per se.

Clinical Implications: Using Self-Help With Clients

This study suggests an ACT-based program for weight self-stigma can be feasibly

provided through a combination of coaching and a self-help book. More broadly, this suggests

the feasibility of using a guided self-help approach with clients and may run counter to some clinicians' potential beliefs that self-help always leads to low adherence.

This format is particularly promising because of the opportunities it affords for disseminating a new intervention. Weight issues are a prevalent problem and few existing weight services are likely to have the training/resources to implement an ACT-based intervention for weight self-stigma, which has largely been unaddressed in programs to date. A guided self-help intervention may significantly reduce the implementation challenges of adding an ACT-based weight self-stigma intervention to existing weight services. For example, coaches would need fairly limited training with regards to ACT, given the focus is on general counseling skills that provide supportive accountability in staying engaged in the book. Future studies might evaluate whether this guided self-help program could be integrated into existing weight loss programs. In addition, such research should explore if and how a weight self-stigma intervention would conflict with standard weight loss strategies, hopefully identifying ways to reduce potential weight stigmatization and to enhance the impact of linking behavior change to personal values.

An additional finding from this study is that coaching variables affected both study engagement (i.e., whether participants dropped out or not) and improvements over time on psychological inflexibility and health. These findings highlight that coaching variables may matter, even in robust self-help programs. It is less clear exactly what aspects of coaching may have affected results, due to the lack of fidelity/competence assessment in this study. Although a structured protocol for coaching was in place, no methods were used to examine coaching drift and fidelity issues. Examination of coaches training experience and self-reported behavior highlight some clues. The most notable is that coach A, who had higher dropout rates and poorer

program effects, reported less frequent prompting of participants. Frequent, effective prompting may be key for maintaining retention in the program and maximizing effects.

The procedures described in this study outline key methods for implementing guided self-help. First, it is important to take time to orient clients to self-help materials at the beginning. This provides a critical opportunity to elicit motivation, establish expectations for adherence, and obtain a commitment to a chosen goal with the book. Second, it is critical to have some form of ongoing monitoring and coaching with clients. These coaching interactions will help maintain ongoing motivation and commitment to the book as well as provide a context to collaboratively problem solve any non-adherence issues. Third, clinicians might consider adding supports such as online quizzes (to help track adherence and comprehension with the book) and a reading schedule (to provide clear expectations in reading the book). It is highly recommended that clinicians looking to implement guided self-help review core materials that informed this study's protocol (Duffecy et al., 2011; Mohr et al., 2011).

Although this study focused on one self-help book for a specific problem area, it also highlights the broader potential of using guided self-help for various problems. Yet, there are challenges in knowing which book is effective to use with which problem given the limited research on self-help books (e.g., Rosen & Lilienfeld, 2016) and the number of books available. One promising source is the Association for Behavioral and Cognitive Therapy's Self-Help Books of Merit program (http://www.abct.org/SHBooks/), which provides a list of recommended self-help books consistent with best practices and the evidence base. This database includes recommended books by problem area along with a corresponding description and review of the book. Beyond this database, recommendations have been provided in selecting mental health mobile apps (Torous et al., in press), which might apply for books as well. These include the

clinician reviewing the book themselves to ensure the quality of content, consulting with other

providers for recommended books, and, when available, reviewing the existing research on self-

help books for those that have previously been found to be effective in clinical research.

Limitations and Conclusions

As a pilot open trial, the study had notable methodological limitations. The largest two

issues are with regards to the small sample size and lack of a randomized comparison group.

These factors significantly limit the confidence in whether results will replicate and whether the

improvements in outcomes identified are due to participation in the intervention or other

unrelated variables. Nonetheless, such preliminary research is important in beginning to build

support for treatment, particularly with self-help materials that are typically disseminated prior to

their evaluation. Arguably, beginning with larger, well powered, randomized trials may slow

such research and delay early identification of potential efficacy for materials that are already

available to the public. Now that preliminary support has been found with *The Diet Trap*, it is

critical that a well powered, randomized trial test the efficacy of the guided self-help

intervention. Additional limitations such as the lack of long term follow up (a critical issue in

weight research), lack of objective weight measurement at 3-month follow up (preventing valid

weight assessment over time), and lack of racial diversity in the sample also should be addressed

in future randomized trials to test the generalizability and long term effects of the intervention.

Overall this study provides preliminary support for a guided self-help intervention based

on the *Diet Trap* book. Importantly, this program focuses on a novel intervention target of

weight self-stigma, which to date has received little attention from treatment developers. More

research is needed to evaluate whether the guided self-help program can effectively treat weight

self-stigma, how it can be integrated into clinical services for weight issues, and whether doing

so improves long term outcomes for overweight and obese individuals.

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