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Acceptance and Commitment Therapy for weight control: Model, evidence, and future directions

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Abstract

Behavioral weight loss programs achieve substantial short-term weight loss; however attrition and poor weight loss maintenance remain significant problems. Recently, Acceptance and Commitment Therapy (ACT) has been used in an attempt to improve long-term outcomes. This conceptual article outlines the standard behavioral and ACT approach to weight control, discusses potential benefits and obstacles to combining approaches, briefly reviews current ACT for weight control outcome research, and highlights significant empirical questions that remain. The current evidence suggests that ACT could be useful as an add-on treatment, or in a combined format, for improving long-term weight loss outcomes. Larger studies with longer follow-up are needed as well as studies that aim to identify how best to combine standard treatments and ACT and also who would benefit most from these approaches.

Keywords

ACT; Obesity; Weight control; Mindfulness; Acceptance

1. Introduction

Behavioral weight loss programs, which include diet and exercise recommendations supplemented by basic behavioral therapy skills training, are effective at producing an average weight loss of 8–10% over 6 months (Butryn, Webb, & Wadden, 2011; Wadden, Butryn, & Wilson, 2007). However participants regain about a third of lost weight within the first year, and by 5 years more than half of participants have returned to or exceeded their baseline weight (Butryn et al., 2011; Jeffery et al., 2000; Perri, 1998). Furthermore, despite often rigorous screening methods, clinical trials show attrition rates above 30% (e.g. Honas, Early, Frederickson, & O'Brien, 2003; Teixeira et al., 2004).

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Treatment innovation has been lacking. The primary approach to improving effectiveness has been to extend the length of treatment, which seems to only delay weight regain (Middleton, Patidar, & Perri, 2012; Perri, Nezu, Patti, & McCann, 1989). Another approach has been to study successful maintainers and recommend strategies that they use (e.g. Klem, Wing, McGuire, Seagle, & Hill, 1997); however studying successful maintainers has not resulted in improved long-term effectiveness of, or adherence to, behavioral weight loss interventions.

Predictors of attrition include binge eating, psychological distress, body-image dissatisfaction, and poor quality of life (Teixeira et al., 2004). Risk factors for weight regain include psycho-social stressors, disinhibition, emotional or stress eating, depression, and feelings of food-related deprivation (Elfhag & Rossner, 2005; Wing & Phelan, 2005). Broadly speaking, coping with difficult or unwanted cognitive and emotional experiences seems to play a vital role in predicting long-term weight loss success.

Recent developments in mindfulness and acceptance-based interventions provide a potential avenue for treatment development. Often referred to as third-generation behavioral approaches, mindfulness and acceptance-based interventions seek to change one's relationship to unwanted thoughts, feelings, or bodily sensations, as opposed to trying to change or control them (Hayes, 2004). Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) is one of the most widely used third generation interventions and is empirically supported for a range of psychological and behavioral problems, including anxiety, depression, chronic pain, and smoking cessation, among others (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Third generation interventions have been growing in popularity and have broad empirical support (e.g. Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004); however weight control interventions have been slow to adopt these newer methods.

In this article we make a case for using ACT in weight control interventions. We compare and contrast the standard behavioral and ACT approaches to weight control, and discuss the relative fit of the two approaches as well as barriers to integration. Finally, we identify research questions that need to be answered in order to better understand if, and to what degree, ACT processes can contribute to better long-term weight control.

2. The standard behavioral approach to weight control

The model for standard behavioral treatment (SBT) for obesity stems from Learning Theory, which suggests that a behavior can be modified by altering the context in which it occurs (i.e. changing the antecedents or consequences of a behavior of interest; Wing, 1998). SBT aims to reduce maladaptive behaviors (e.g. high calorie diet; sedentary behavior) and replace with and reinforce healthy behaviors (e.g. reduced calorie diet; exercise) by teaching a variety of first generation behavior therapy techniques (Butryn et al., 2011; Wing, 1998).

Two major components of SBT are self monitoring and goal setting, which are intended to help the individual adhere to caloric targets, exercise regimens, and regular weighing. Individuals are given eating, exercise, and weight loss goals and taught to monitor progress. Guidelines for generating new goals are also taught.

Another component of SBT is stimulus control, or changing cues in the environment to make healthy behavior more likely to occur. For example, to decrease the potential for an overeating episode, one may choose to limit the portion size that is available (e.g. by buying one cookie at the store versus a large package). In turn, to increase the possibility of exercise, one could keep their workout clothes in their car to ensure they are available immediately after work.

Finally, SBT utilizes cognitive interventions (often referred to as second generation behavioral strategies). These strategies are designed to help the individual identify typical cognitive and emotional triggers for eating and sedentary behavior, learn to challenge their maladaptive thoughts, and modify problematic emotional states in order to engage in behaviors consistent with their weight loss goals. For example, thought stopping is taught to deal with food cravings, and stress reduction methods (e.g. non-food self-soothing) are utilized to combat emotional eating.

The overall philosophy of SBT is best described as “skills based.” Treatment delivery is psychoeducational and topics are often presented as stand-alone modules, usually in group-based settings. Goals are provided to clients. For example, the caloric intake goal and initial weight loss goal (usually 10% of initial body weight) is typically determined by the client's starting weight. The treatment is narrowly focused on the goal of weight loss, and topics are discussed in the context of how they relate directly to reducing caloric intake or increasing physical activity. The primary target is to build well-trained habits that become part of regular, daily activities. For example, weighing oneself is often likened to brushing teeth—it should be done at the same time in the morning upon waking, so there is no need to remember to do it later.

3. The ACT approach to weight control

ACT comes from the same tradition as SBT, with a shared focus on modifying behavior by changing the context in which it occurs. While both approaches aim to foster engagement in healthier behavior, ACT makes different assumptions about the etiology of behaviors that contribute to obesity, and thus focuses on different mechanisms in treatment.

ACT methods are based on Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), a basic science model of language and cognition. RFT research has shown that the natural and normal use of language can have a number of maladaptive consequences. A full treatment of RFT and its relationship to ACT methods is outside the scope of this manuscript; however we will briefly summarize relevant findings here (for full treatments of RFT theory and empirical evidence, see Barnes-Holmes, Hayes, Barnes-Holmes, & Roche, 2001; Dymond & Roche, 2013).

Language makes psychological pain possible in the absence of a painful stimulus. For example, the memory (a verbal construct) of being ridiculed because of your body shape can be just as painful as any instance of ridicule. Psychological pain can also be triggered by virtually anything, because language is an arbitrarily applied ability. Thus stepping on a scale can occasion painful thoughts and feelings about one's weight, even though no direct aversive consequences are present in the moment.

Given the natural human tendency to avoid pain, private experiences themselves can become targets of avoidance. For example, someone might avoid going swimming because getting into the swimming pool could occasion anxiety, fear of judgment from others, feeling “disgusting,” and self-criticism. This is referred to as experiential avoidance, or the tendency to try to change, control, or escape from unwanted thoughts, feelings, or bodily sensations when doing so causes harm (Hayes et al., 2004).

Experiential avoidance is a common core process that contributes to a broad range of mental and behavioral health problems (Hayes et al., 2006; Hayes et al., 2004), and preliminary evidence suggests it is relevant to weight control (Forman et al., 2007; Hooper, Sandoz, Ashton, Clarke, & McHugh, 2012; Lillis, Hayes, Bunting, & Masuda, 2009). This makes logical sense, as experientially avoidant moves are often toxic to weight control. Emotional or stress eating tends to function in part to reduce or change negative affect (Macht, 2008). Furthermore if someone is feeling shame after overeating, one way to try to avoid additional shame is to refrain from dieting and recording calories all together, so as not to be reminded of a “diet failure.”

ACT uses acceptance, mindfulness, and values processes to produce psychological flexibility, or the ability to take values-based action in the presence of unwanted thoughts, feelings, and bodily sensations. In the context of weight control, ACT seeks to promote healthy behavioral patterns consistent with stated values, while teaching mindfulness and acceptance skills to increase behavioral commitment to values-based behavior.

4. Differences between ACT and SBT

One of the differences between ACT and SBT is that ACT does not supply a priori goals to treatment. In SBT, the overarching treatment goal is to lose weight or prevent weight gain. In ACT, the overarching treatment goal is effective living, defined as behaving consistent with one's personal values. The individual in treatment defines the values. From an ACT perspective, values are desired qualities of action, and thus weight loss itself cannot be a value. However healthy living often relates to the ability to engage in desired activities, set a positive example for family members, or live longer to continue to participate in valued relationships, and weight loss can be one pathway to these valued ends. Thus, in ACT, weight loss is situated broadly into values-based living across a variety of domains (e.g. relationships, health, work, and recreation).

Given this, ACT places greater emphasis on internally-based motivation. In SBT, it is acceptable to lose weight in an attempt to stop feeling bad about how you look, or to try to increase your self-confidence, or to avoid potential disease in the future. In ACT, clients would be encouraged to find appetitive, non-avoidant forms of motivation. For example, if an individual wanted more self-confidence, she might be asked what behaviors she would engage in if she was more self-confident (e.g. seek a new job, be intimate with her partner, go dancing). Treatment would be organized around these values-based actions and would focus on getting her to engage in these desired activities now, as opposed to waiting for her body shape to change.

Another difference between ACT and SBT is that, generally speaking, ACT emphasizes the function more than the topography of behavior. For example, if an individual did not exercise in the past week, an SBT approach would utilize direct problem-solving. The interventionist might brainstorm alternative times to exercise (morning vs. night), identify strategies to make working out easier (take your gym clothes to work and change there), or help with time management (schedule the exercise in your calendar like you would an important appointment).

In ACT, the interventionist might instead try to look at the functions of not exercising. Did not exercising allow the individual to avoid unpleasant physical sensations associated with exercise, or fears of judgments from others at the gym? Did the alternative behaviors (e.g. watching TV) provide some comfort or relief from unwanted feeling states (e.g. stress, fatigue, and boredom)? Acceptance, mindfulness, and values techniques would then be employed to help the individual relate differently to the perceived barriers to exercise. For example, the individual might learn to be mindfully aware of his fears of judgment from others and urges to engage in sedentary behavior, and notice them as transient and ever changing like he would clouds passing overhead.

In relation to SBT, ACT places more emphasis on private experiences, such as thoughts, feelings, and bodily sensations. As opposed to changing private experiences, the primary focus of treatment is to help change one's relationship to them in such a way that the individual can more fully pursue values-based living. Once values are clarified, behaviors inconsistent with values (e.g. overeating, excessive sedentary behavior) are seen as ineffective ways of coping with unwanted private experiences and are addressed with acceptance and mindfulness strategies.

5. Support for using ACT for weight control

In this section we review two studies that used *only* ACT methods to target weight control. Other studies that have used ACT/SBT combined methods will be reviewed later. There is empirical support for using ACT methods to target weight-related issues, such as body image dissatisfaction (Pearson, Follette, & Hayes, 2012), disordered eating patterns (Juarascio, Forman, & Herbert, 2010), physical activity (Butryn, Forman, Hoffman, Shaw, & Juarascio, 2011), reactivity to food cravings (Forman et al., 2007), and coping with bariatric surgery (Weineland, Arvidsson, Kakoulidis, & Dahl, 2011), however a review of these studies is outside the scope of this manuscript.

One RCT examined the efficacy of ACT for weight maintenance in a sample of participants who had recently completed a weight loss program (Lillis et al., 2009). Participants received a one-day ACT workshop (5 contact hours) or were assigned to a wait-list and asked to continue their current strategies for managing weight. The workshop included ACT methods focused on reducing experiential avoidance and increasing psychological flexibility. No weight influencing interventions were taught. At 3-month follow-up, ACT participants had lost an additional 1.6% of their body weight, whereas the control group gained .3% and overall a significantly higher proportion of the ACT participants had maintained or lost

weight. The ACT group also showed significant improvements in quality of life and reductions in psychological distress and self-stigma (Lillis et al., 2009).

Another RCT examined a one-time, 2-h ACT workshop compared to a no treatment control group for women who were already trying to lose weight (Tapper et al., 2009). Similar to the previous study, no weight interventions were taught in the ACT workshop. At 6 months, workshop participants engaged in significantly more physical activity than control participants. Within the ACT group, participants who reported applying the principles in the workshop showed a significant decrease of 2.3 kg when compared to those who reported never applying them (Tapper et al., 2009).

6. Potential benefits of combining approaches

Weight loss and weight maintenance benefits could be improved by providing foundational SBT work to give the individual the tools necessary to achieve their caloric and exercise goals, and adding the ACT approach to target the underlying barriers while enhancing motivation for adherence. ACT targets psychological flexibility, which, by definition, provides the individual with the ability to deal with new challenges as they show up. This could improve adherence to weight loss programs and prevent dropout. The following core processes in ACT may lend themselves to integration.

Values work has the potential to increase “buy in” to existing programs. While many people seek treatment because they are aware of the health complications associated with obesity or their provider has urged them to lose weight, they may be more likely to adhere to a challenging regimen if they can find the meaning behind the behaviors required to lose weight. For example, consuming 1200 cal per day to lose weight upon the recommendation of a physician may seem like a daunting and discouraging task riddled with barriers such as deprivation and time consumption. But consuming 1200 cal per day to experience greater longevity and the ability to be active with grandchildren may then guide one towards healthier behaviors more naturally, especially during difficult times (e.g. when cravings are strong). In conjunction with basic goal setting and problem-solving strategies, values may provide a long-term guide for behavior, which may help with persistence and lead to better weight loss maintenance.

Mindfulness strategies have already been incorporated into some SBT protocols to address eating at a slower pace, without distraction, etc. Mindfulness work may also enhance an individual's ability to perform more SBT consistent behaviors (e.g. tracking of food intake) by learning to direct their awareness to desired tasks despite the presence of distracting or unwanted thoughts and feelings. Additionally, mindfulness can help raise awareness of common triggers (e.g. shame, self-judgments) for unhealthy behavior (avoiding the scale, overeating), helping to signal times to use acceptance-based strategies in order to persist with healthy behaviors (recording food intake, taking a walk).

Acceptance work pairs well with SBTs stimulus control and urge management in that beyond some environmental changes (e.g. not buying tempting foods to be stored at home), food/eating stimuli is virtually unavoidable and therefore cravings are inevitable. However, enhancing one's acceptance of, or willingness to, experience cravings allows the individual

to continue to persist in engagement in important activities (e.g. attending a wedding or exercising) without having to work to get rid of undesired internal experiences before participating. Additionally, acceptance-based work may allow the individual to notice weight related stigma and body image concerns without causing them to avoid activities where related uncomfortable thoughts and feelings may show up (e.g. concern about being judged by others at the gym).

ACT may extend treatment benefits into other areas of life. Learning to make values guided decisions has implications for more broadly improving quality of life and psychosocial functioning (e.g. identifying and pursuing relationship values). Mindfulness and acceptance strategies can optimize quality of life through enhanced connection with the present moment (and those in it) and increased willingness to allow the presence of uncomfortable thoughts and feelings in other areas of functioning.

7. Support for using combined methods

In an open trial of an acceptance-based behavioral intervention for weight loss using SBT strategies from the LEARN program (Brownell, 2004) as well as acceptance-based strategies including distress tolerance, mindfulness and commitment enhancement, participants lost an average of 6.6% of their body weight from baseline through posttreatment and continued to lose weight from posttreatment to a 6 months follow up (9.6%; Forman, Butryn, Hoffman, & Herbert, 2009). Additionally, participants noted increases in weight-related quality of life during the 12 week program, which suggest that treatment benefits may have generalized to other areas of their lives.

Another open trial (Niemeier, Leahey, Reed, Brown, & Wing, 2012) tested a 24 weeks SBT + ACT combination treatment for weight loss for participants high on internal disinhibition (eating in response to thoughts and emotions). The intervention was comprised of both SBT (diet and exercise targets, self monitoring, stimulus control, problem solving, assertiveness training, goal setting, and relapse prevention) and ACT components (acceptance, mindfulness, values). Results yielded strong findings for this population, which usually perform poorer than those without internal disinhibition struggles (Niemeier, Phelan, Fava, & Wing, 2007), with a mean weight loss of 12 kg at posttreatment and 12.1 kg at 3 months follow up (Niemeier et al., 2012).

8. Potential models for combining SBT and ACT

We will outline three potential models for integrating SBT and ACT while noting that there may be other effective models for integration.

The model that has been tested in the literature is the fully integrated model. In this model, SBT is taught, virtually unchanged, from session 1 to somewhere between session 4–12. This allows the basic SBT skills of diet, exercise, self-monitoring, goal setting, and stimulus control to be taught and reinforced, with large initial weight loss the primary goal. The treatment then transitions into dealing with difficult and unwanted private events as barriers to persisting with SBT skills. Values are then brought into treatment and outcome targets are slowly broadened, but only after healthy diet and exercise patterns are observable.

The primary advantage of the fully integrated approach is that it allows SBT to establish new healthy habits and produce large initial weight loss, a reliable and repeatable outcome, and then uses ACT skills to foster persistence and maintenance of healthy habits over time. This is potentially a powerful combination, as the influence of SBT tends to be reduced over time.

However, it is possible that integrating weakens both approaches. For example, teaching acceptance takes time away from reinforcing well-trained diet and exercise habits and problem-solving specific instances of adherence failure. If acceptance skills are not well acquired for some of the reasons listed above, then the intervention has been weakened as a result. Neither SBT nor ACT is delivered at “full strength.” Furthermore, there are philosophical and structural differences between ACT and SBT, which we detail in the next section.

Another model for integration involves using a front-end ACT workshop before starting SBT. The ACT workshop could be used to foster general psychological flexibility skills, which are then tied to problematic thoughts and feelings as they relate to overeating and sedentary behavior patterns.

The primary advantage of the front-end workshop model is that it could potentially contextualize the SBT treatment, tying it broadly to how one relates to private events that tend to be associated with overeating and sedentary behavior, while also broadening the goals of treatment within the framework of values and personal meaning. This could lead to better treatment engagement and adherence.

The primary disadvantage of the front-end workshop is that it would require significant modifications to SBT in order for the workshop to retain some of its effect. Values, mindfulness, and acceptance would need to be at least partially integrated into SBT lessons, and explicitly anti-ACT techniques and lessons would need to be removed. This partial integration would require dealing with all the potential obstacles listed previously.

Another potential model is using ACT for maintenance, either in a workshop or multiple meeting format delivered after 4–6 months of SBT. The primary advantage of this approach is the potential to side step integration issues. SBT effectively produces short-term weight loss and can be delivered efficiently by a variety of interventionists. In this approach, SBT would be delivered more or less as is, with perhaps a few modifications to remove explicit cognitive change techniques (a minor component of SBT anyway).

ACT could then be delivered when something new is most needed, during maintenance. On average, most individuals achieve more rapid weight loss in the beginning of SBT and by the end have slowed, stalled, or started to gain back weight. This seems like an ideal time to deliver new skills, especially ones that focus on the difficulty of persisting with behavior in the face of significant cognitive and emotional barriers. ACT could be administered by different interventionists, and, if done in a workshop format, would be portable. The workshop could be added to a variety of different kinds of programs and settings.

The primary disadvantage of this approach is that psychological flexibility is not taught in the weight loss phase. Treatment engagement and dropout can be an issue 4–6 months into treatment, and thus ACT may be delivered to a reduced audience and with a reduced impact.

9. Potential obstacles to combining ACT and SBT

When designing interventions, it is useful to understand the structural and philosophical differences that could make it difficult to integrate ACT and SBT.

The most obvious conflict between ACT and SBT is the over-arching treatment goal. A purely ACT intervention would not organize treatment around producing changes in weight. A purely SBT approach usually does just that by encouraging regular, sometimes daily weighing at home, weekly weigh-ins before group meetings, and periodic graphical feedback of weight changes during treatment. Philosophically, this is a point of departure. One potential solution would be to use weight loss as a target until the initial 10% loss is reached, and then gradually switch focus to broaden out to more values domains.

However, ACT would strongly encourage individuals to broaden the focus to what matters in their life beyond weight and body shape from the beginning of treatment. Devotion to the scale (e.g. daily weighing as prescribed by SBT methods) could be seen as a significant problem in ACT, especially when losing weight is seen as requirement for engaging in values-based behavior, which is frequently the case. In a combined approach, the SBT portions would likely continue to be more problem focused, but then the ACT based work would expand area of focus to include discussion of other important areas of functioning.

With that, the logistics around the use of the scale is a structural problem as well. If your treatment contract is to increase healthy, values-based action in daily life, and work to broaden the focus to living well not only in relation to food and exercise, but also with relationships and at work, and then each week continue to weigh individuals prior to treatment meetings, you are sending an implicit message that the scale is important in and of itself. Given the majority of individuals will come in with a strong belief that the scale and the actual weight loss numbers are the most important aspect of treatment, weighing could reinforce this notion even as you are trying to de-emphasize it. This same problem can be said of recording food intake and meeting a calorie goal.

SBT may inadvertently reinforce patterns of avoidance, and reducing avoidance is one of the primary targets of ACT, which presents some challenges. Take for example sexual intimacy. Many overweight and obese individuals seeking treatment engage in little or no sexual activity with their partners, and often endorse beliefs that they cannot until they lose an arbitrary amount of weight. These arbitrary weight loss goals can be moving targets. Ten pounds becomes 20, and so on. This important, valued action gets put off in the name of weight loss or the individual is instructed to change their thoughts about becoming more intimate with their partner. ACT would target sexual intimacy, in the presence of fear and shame, as a goal (assuming it is values-consistent to be intimate with one's partner) even before losing weight. A combined approach may include weight related behavioral targets in addition to other values targets and attempt to both track and manage the two.

Another potential conflict between ACT and SBT is the general approach to dealing with private experiences. SBT continues to employ cognitive and emotional change techniques, such as stress reduction, thought disputation, and cognitive restructuring. The explicit cognitive change components of SBT can be replaced with ACT components if desired. For example, a previous SBT class on thought stopping can be changed to an ACT defusion class. However the implicit components of SBT also present a challenge. For example, problem-solving often involves identifying difficult thoughts as causes of behavior. This is philosophically inconsistent with an ACT-approach, which emphasizes that thoughts do not cause behavior and can in fact be de-coupled from action.

Related, SBT and ACT approach food cravings in inconsistent manners. SBT largely targets reducing and eliminating, where possible, cues that tend to be associated with food cravings. For example, stimulus control procedures are used to remove tempting and desired foods from the house or bury them in parts of the cabinets where they cannot be seen, implying that cravings need to be avoided or changed.

ACT would not encourage purchasing high fat, high caloric food, especially if that is not consistent with stated values, however it also recognizes that food cues are inevitable in the current environment and thus may encourage exposure to tempting, desired foods. From an ACT perspective, food cravings are not the problem, but instead one's relationship to cravings is what matters. Giving in to food cravings is an act of avoidance, as it relieves a state of deprivation. Thus, exposure to deprivation along with acceptance skills would be a central part of treatment. In a combined treatment program, clients could be encouraged to remove trigger cues where feasible, but also learn acceptance skills, which would help when removal of trigger cues is simply impossible. Acceptance may be more of a long term target where as stimulus control could be used more frequently at the beginning of the program.

Generally speaking, SBT focuses on behaviors only as they relate to weight control efforts. SBT is not considered psychotherapy. Thus, if work, or relationships, or general psychological struggles come up in treatment, they are discussed only to the extent that they directly relate to specific instances of eating, sedentary behavior, or poor self-monitoring of food intake. The primary advantages of this approach is that it allows the treatment to be delivered by a wide range of interventionists, including dieticians and bachelor's and master's level exercise physiologists, and it keeps the focus narrow and consistent.

The primary disadvantage of excluding discussion of more general life domain topics is that overeating and sedentary behavior is often related to psychological struggles. Practicing acceptance skills requires inducing or contacting unwanted, painful private experiences. Thus, stigma related to body shape is an essential topic, and ACT seeks to produce psychological flexibility in relation to shame associated with painful experiences related to body shape which is outside of the scope of SBT. Therefore, combining approaches may require an expanding the range of experiences discussed in treatment.

Another philosophical difference can be found in the manner in which each approach attempts to facilitate behavior change. SBT aims for well-trained habits. Individuals are instructed to eat similar foods each day and week, as a way of reducing the cognitive burden

of tracking calories. Likewise, exercise is scheduled into the day, usually at the same time. ACT teaches mindfulness and values as the keys for maintaining healthy behaviors. Instead of behaving out of repetition, ACT encourages thoughtful reflection on one's values and frequent evaluation of behavior in relation to one's values. Mindfulness is used to orient to particular challenges of the day, and behaviors are taught to be used flexibly depending on the current context. One potential solution is to use repetition as a way to initiate participation in desired activities and then use mindfulness as a strategy to promote persistence over time.

One final obstacle is the additive nature of ACT skills building. Absences in a 6-month or longer treatment are inevitable. SBT sessions usually require no prior training. Thus, a class missed does not hurt any subsequent classes and can also easily be made up. ACT skills build on each other and interact with each other. For example, values work is more effective if acceptance and mindfulness have already been taught. Within skills, this format presents an additional challenge. If you introduce defusion over 3 sessions, any missed class within that sequence could significantly hurt an individual's chance of adequately developing defusion skills. Having said that, ACT+SBT combined methods have been used effectively in a 1-h, weekly format (Forman et al., 2007; Niemeier et al., 2012). We recommend thoughtfulness during the treatment design phase in regard to how absences will be handled and missed lessons will be made-up.

10. Research agenda

SBT is effective over 6–9 months and is easy to deliver in group format, thus a major focus of the research agenda should be determining whether ACT adds utility beyond what can be achieved in SBT that warrants the additional training that would be required to deliver ACT elements competently. This question will ultimately be answered by testing different models of integration against relevant control groups in randomized trials, but careful laboratory studies testing different mixed methods on relevant outcomes over shorter time lines could also be very helpful, particularly for addressing obstacles to integration. For example, a brief exercise-focused intervention could focus on values clarification as compared to stimulus control and problem-solving methods.

The utility of ACT can be assessed in a variety of ways. Can ACT methods extend initial weight loss or improve weight loss maintenance beyond what is currently achieved in SBT programs? Maintenance seems to be an obvious area to focus on given how difficult it is for most individuals.

Another area of interest is in improving adherence to dietary and exercise recommendations. Even within adherence however, there are more nuanced questions. For example, can ACT methods be used to improve adherence to diet and exercise as traditionally presented, or should the ACT intervention explicitly de-emphasize adherence to expert recommendations and try to foster individualized, values-driven behavioral plans? Also, can ACT improve treatment engagement and reduce dropout? For example, a focus on reducing experiential avoidance could prevent dropout due to the shame associated with gaining weight while in treatment.

Perhaps more to the point, are there subsets of populations that would benefit more from using ACT or combined methods? It may be that ACT skills can have a broad impact on weight loss in general. However it is possible that, for example, emotional eaters and individuals with co-occurring depression or anxiety would respond particularly well to an integrated approach. Highly stigmatized individuals, especially those who tend to cope using avoidance, might also be a sub-population who could benefit more from ACT.

Related, the role of stigma and shame in weight loss and weight loss maintenance is still unclear. The incidence and effects of stigma have been well-documented (e.g. Puhl & Heuer, 2009), but very little work has been done showing how stigma and shame impacts treatment. Of particular interest is how stigma, shame, and avoidant coping interact to influence overeating and sedentary behavior.

Finally, there is the question of training interventionists. For example, can dieticians be trained to deliver ACT in an efficient, effective manner? What kind of training and supervision is required? Can we expect equivalent outcomes if the ACT intervention is being delivered by psychologists versus exercise physiologists?

11. Weight loss as experiential avoidance

Many of the questions about using ACT and integrating it with SBT relate to a core question: Is losing weight a form of experiential avoidance? Of course the answer will be “it depends,” but we believe it is useful to think this issue through, as it will have implications for developing and testing intervention protocols.

Thought of as a continuum, on one side could be an individual who is highly motivated by having enough energy to keep up and play with her children, participate in activities with her family, set a healthy example, and ultimately be around for all major milestones. This can be thought of as a primarily non-avoidant agenda, as weight loss is seen as a means to fostering valued ends. On the other side is an individual who is primarily motivated by feeling good about her looks, fitting into a bathing suit, and being seen as attractive by others. This can be thought of as primarily an avoidant agenda, with a focus on losing weight in order to change beliefs, self-judgments, and feelings. Given what is known about experiential avoidance, the latter individual would be expected to do worse over the long-term, all other variables being equal, however that is an empirical question. Most people will reside somewhere in the middle, making the distinction difficult.

Broadly, it is important to consider the message being delivered by a specific intervention. Are we fostering an avoidance agenda if we emphasize the scale and encourage motivation based on “feeling better” or “having more confidence” or “fitting into my bathing suit?” If so, this could partially explain the maintenance problem. An avoidant agenda may work well in the short-term, but evidence suggests that it is toxic in the long term. Indeed, if individuals are losing weight primarily to influence their thoughts and feelings (and the thoughts and feelings of others), they could find that, (1) they did not lose “enough” weight to “fix” their thoughts and feelings, or, (2) they lost the weight and still find themselves struggling to change thoughts and feelings. Either way, persistence in health behaviors could be reduced over time.

We believe this issue should be considered carefully, and perhaps be part of an overall research agenda, in order to better understand the most effective ways to foster large initial weight loss and sustain new healthy habits over time, when doing so is consistent with one's personal values.

Summary

ACT has shown promise for improving long-term weight control outcomes in pilot interventions testing both stand-alone ACT and integrated SBT+ACT interventions. However philosophical and structural differences exist between ACT and SBT, requiring thoughtful decision-making when constructing intervention protocols. Future research should focus on efficacy, the added utility of ACT methods, intervention formats, identifying populations that would most benefit from ACT, and interventionist training.

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