Journal of Contextual Behavioral Science 3 (2014) 236–247

Contents lists available at ScienceDirect

Journal of Contextual Behavioral Science

journal homepage: www.elsevier.com/locate/jcbs

Psychological flexibility is not a single dimension: The distinctive flexibility profiles of underweight, overweight, and obese people

Joseph Ciarrochi [a,*], Baljinder Sahdra [a], Sarah Marshall [a], Philip Parker [a], Caroline Horwath [b]

[a] Institute of Positive Psychology and Education, Australian Catholic University, Australia
[b] University of Otago, Department of Human Nutrition, New Zealand

ARTICLE INFO

Article history:
Received 4 October 2013
Received in revised form
3 July 2014
Accepted 11 July 2014

Keywords:
Self-concept
Self-esteem
Acceptance
Hope
Personal strivings

ABSTRACT

Psychological flexibility interventions such as Acceptance and Commitment Therapy have been shown to be beneficial for weight management. Flexibility is often treated as a single, global construct, but it can also be described in terms of interrelated components (e.g., accepting, awareness, defusion, values). Are some components of flexibility of greater relevance to weight-related issues than others? We utilized a planned missing data design to assess weight status and a broad range of psychological flexibility components in a nationally representative sample of Americans ($N=7884$; 3748 males, 4136 females; age: $M=47.9$, $SD=16$). Profile analyses revealed that different weight and gender groups showed different configurations of inflexibility. Underweight men showed a "defensive but active" pattern, expressing high avoidance on multiple dimensions, high levels of fusion, but also showing high hope and willingness to experience distress when pursuing goals. Overweight and obese participants did not show elevated levels of inflexibility, and indeed there was some evidence that overweight men (but not obese and severely obese men) were more flexible than other males. Severely obese participants showed elevated patterns of inflexibility across multiple indices, but this pattern differed for men and women. We conclude that psychological flexibility should not be treated as a unitary construct, and make specific suggestions for future intervention research.

1. Introduction

Human beings have a complex and deeply symbolic relationship with food. Several decades of research suggests that people eat or avoid eating for reasons that have nothing to do with physical hunger (Dallman, 2010; Keskitalo et al., 2008; McAllister et al., 2009; Vamosi, Heitmann, & Kyvik, 2010; Westenhoefer, Stunkard, & Pudel, 1999). For example, people eat to comfort themselves, to overcome fatigue, to manage stress, and to increase feelings of control (McAllister et al., 2009; Troisi & Gabriel, 2011; Westenhoefer et al., 1999). People also under-eat for emotional reasons. For example, some people avoid distress by reducing intake of healthy foods and total calories (Dallman, 2010; Merwin, Zucker, Lacy, & Elliott, 2010). Others may seek to control feelings of insecurity by striving to be perfect (Hewitt, Flett, & Ediger, 1995). A preoccupation with food and weight-related goals may also serve as a distraction from other life issues.

Eating for reasons other than hunger can be a major cause of weight gain (Ciarrochi, Bailey, & Harris, 2014). In many Western countries, such as the United States and Australia, the majority of the population is overweight or obese (Australian Bureau of Statistics, 2012; Berghofer et al. 2008; Caballero, 2007; Flegal, Carroll, Kit, & Ogden, 2012). Another small percentage is underweight. This means that the so-called "healthy weight category" makes up only about one third of the population. Additional research is needed to identify the psychological factors that lead to unhealthy weight gain or loss, factors that might then become the target for intervention research.

Recently, researchers have begun to explore the link between excessively low/high weight and psychological flexibility (Masuda & Latzman, 2012; Merwin et al., 2011). Psychological flexibility is a broad construct defined as the ability to connect with the present moment and to experience thoughts and feelings openly as they arise, whilst persisting in action that is consistent with values, or changing action when the situation requires it (Hayes, Strosahl, & Wilson, 2011). Psychologically flexible people might engage in less emotional (or defensive) patterns of eating, be mindful of the causes of their eating, and stay flexibly committed to their health-related goals.

This paper examines the link between psychological flexibility and Body Mass Index (BMI) category (underweight to severely obese). To date research in the area of weight has focused on psychological flexibility as a unitary construct (Madden, Leong, Gray, Ciarrochi, & Horwath, submitted for publication; Masuda & Latzman, 2012; Merwin et al., 2011). However, psychological flexibility can be seen as a broad construct encompassing the following components: acceptance, defusion, self-as-context,

* Corresponding author.
E-mail address: Joseph.Ciarrochi@acu.edu.au (J. Ciarrochi).

http://dx.doi.org/10.1016/j.jcbs.2014.07.002
2212-1447/

flexible attention to the present moment, chosen values and committed action (Hayes et al., 2011). Meta-analysis of 66 laboratory based component studies provided support for both the usefulness and theoretical relevance of the varied components specified by the psychological flexibility model among both convenience and at risk and distressed population samples (Levin, Hildebrant, Lillis, & Hayes, 2012). Additionally research has begun to examine the benefits of specific flexibility components with varied conditions such as pain (Branstetter-Rost, Cushing, & Douleh, 2009) and anxiety disorders (Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Levitt, Brown, Orsillo, & Barlow, 2004).

Similarly interventions in the weight area would likely benefit from a fine-grained analysis of the components of psychological flexibility and their relevance to BMI status. For example, perhaps the flexibility profile for those who are overweight is quite different from those who are underweight. In other words, are there interactions between BMI category and components of psychological flexibility? A lack of parallelism would suggest that some of the components of psychological flexibility are more strongly linked to a particular BMI status than other components. If this does indeed happen, then it would represent a serious challenge to the notion that psychological flexibility should be treated as a unitary construct. Interventions could be designed to focus on the flexibility components that are relevant to specific subsets of clients. This research will therefore examine not only global psychological flexibility, but also the profile of accepting, present moment awareness, defusion and progress towards important life goals or strivings of individuals within each BMI group.

The present study will focus on components of flexibility that have been tied to mental health, rather than those studied exclusively in the context of health. Many people who seek help for mental health issues struggle with weight issues of some kind as a frequent, if important, side issue. In addition to increasing the risk of physical illness, weight problems may be a source of emotional distress and stigma (Major, Eliezer, & Rieck, 2012; Onyike, Crum, Lee, Lyketsos, & Eaton, 2003; Schvey, Puhl, & Brownell, 2011) and triggers for potentially unhealthy weight control behaviors. The practitioner in promoting aspects of psychological flexibility may also help clients to better deal with their weight related issues (even if this is not the primary target of the intervention).

We will start our review with research looking at psychological flexibility as a unitary, global construct. We will then move to research examining the components of flexibility and their link to BMI.

2. Global psychological flexibility and BMI

There has now been several studies examining the ability of psychological flexibility interventions (i.e., ACT) to promote healthy BMI (Forman et al., 2013; Forman, Butryn, Hoffman, & Herbert, 2009; Juarascio, Forman, & Herbert, 2010; Lillis, Hayes, Bunting, & Masuda, 2009; Pearson, Follette, & Hayes, 2012; Tapper et al., 2009; Weineland, Arvidsson, Kakoulidis, & Dahl, 2012) and exercise behavior (Butryn, Forman, Hoffman, Shaw, & Juarascio, 2011). One study showed that a group ACT-based intervention, when delivered by experts, produced significantly greater weight losses at 6 months than standard behavioural treatment (mean weight loss 11% versus 5%; Forman et al., 2013).

Lillis et al. (2009) randomly assigned overweight participants who had lost weight within the past 2 years to a wait-list or a 1 day ACT workshop targeting obesity-related stigma. At 3-month follow-up, ACT participants had lost an additional 1.6% of their body weight, whereas the control group gained .3%. Weineland et al. (2012) examined the role of ACT in preventing weight regain amongst bariatric surgery patients. The trial was an RCT with an ACT/internet condition (two face-to-face sessions + internet) and a treatment-as-usual condition. Participants in the ACT condition showed significantly reduced disordered eating behaviours (e.g., emotional eating), and improved body satisfaction and quality of life. In yet another study, Butryn et al. (2011) conducted an RCT comparing 4 hours of education with ACT for promoting physical activity, and found that ACT increased objectively measured exercise.

In addition to ACT intervention research, recent correlational research suggests a link between flexibility and weight status. Madden et al. (submitted for publication) have shown that lower psychological flexibility is associated with higher BMI in a nationwide sample of middle-aged women. That study also indicated that inflexible people are more likely to binge and consume high energy-dense foods. Masuda and Latzman (2012) found similar results amongst university students, with inflexible students being more likely to experience bulimia and food preoccupation. In that study, inflexibility was not associated with BMI. In addition, psychological flexibility has been positively associated with eating in response to physical hunger (Boucher, Leong, Gray, Ciarrochi, & Horwath, 2013), which in turn is strongly linked with lower BMI (Madden, Leong, Gray, & Horwath, 2012).

Thus far we have been focusing on overeating, but global psychological inflexibility may also be associated with problems related to under-eating and anorexia (Merwin et al., 2011; Sandoz, Wilson, Merwin, & Kellum, 2013). For example, Sandoz et al. (2013) found a strong link between inflexibility around body image and the extent to which individuals restrict food intake, obsess about thinness, and experience eating related discomfort.

3. Psychological flexibility components and BMI

Psychological flexibility is argued to consist of six components, including experiential acceptance, contact with the present moment, defusion, self-as-context, and committed action (Hayes et al., 2011). All but self-as-context has been heavily researched (Levin et al., 2012). Flexibility components are often studied in isolation, with, for example, some papers focusing on fusion, and another on values. This makes it difficult to assess configural hypotheses, i.e., whether a particular subpopulation can be high in some aspects of flexibility and average or even low in others. The present paper will remedy this problem by seeking to measure components of flexibility at the same time. We now take a closer look at flexibility components.

3.1. Experiential acceptance versus change

Standard cognitive behavioural interventions often focus on improving the effectiveness of client behaviour by seeking to change the form or frequency of feelings or thoughts. For example, they may seek to boost self-esteem, reduce stress, or challenge dysfunctional beliefs (Ciarrochi & Bailey, 2008). However, such attempts to alter or control private events can sometimes be problematic. Control strategies may make it more difficult to cope with food cravings and lead to consumption of craved foods, whereas acceptance-based strategies may reduce craving-based consumption (Forman et al., 2007; Hooper, Sandoz, Ashton, Clark, & Mchugh, 2012). Similarly, acceptance-based strategies may lead to a greater willingness to allow and enjoy consumption of a wide variety of foods (those perceived as healthy and otherwise), rather than regarding some foods as forbidden which can lead to food preoccupation and greater likelihood of bingeing (Tylka, 2006). Outside the eating behaviour area, the paradoxical effects of control have now been