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Integrating intervention targets offered by homeostatic theory

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Abstract

Marks presents "homeostatic theory" which proposes that weight gain is fostered by a "Circle of Discontent" consisting of body dissatisfaction, negative affect, and overconsumption. This innovative framework offers potential intervention approaches, including victim-blaming, stigma, and discrimination, as well as devalorizing the thin-ideal. Our article discusses possible ways that clinical health psychologists based in university settings may be uniquely positioned to consider and implement large-scale programs that have shown great promise for addressing these core issues.

Keywords

body image, health promotion, intervention, obesity, stigma

In Marks' (2015) new theory of obesity, it is proposed that health and illness are regulated by homeostasis, a property of all living things. Homeostasis is a process that maintains equilibrium at set-points using feedback loops for optimum functioning of the organism. The theory extends this well-known principle in physiology to the field of psychology. Marks (2015) suggests that "imbalances in homeostasis causing overweight and obesity are evident in more than 1 billion people." In this theory, homeostatic obesity imbalance is attributed to a "Circle of Discontent" (COD), a system of feedback loops linking weight gain, body dissatisfaction, negative affect, and overconsumption (see Figure 1).

The COD theory is consistent with an extensive evidence base, which is reviewed by Marks (2015). Homeostasis theory of obesity focuses on five feedback loops that form an insidious and vicious "COD" (Figure 1). The theory assumes that for most people, much of the time, these five pathways are in equilibrium forming a Circle of Content. However, if high levels of dissatisfaction, negative affect, consumption, or increased body weight should arise, then interactivity through the feedback loops forms a vicious circle, a disturbance to the stability of the system that controls weight gain. When it becomes activated, the system drifts away from equilibrium toward a dysfunctional state of non-control. This follows from the fact that the activation of any one of the four processes within the circle has the potential to activate its neighbors. The feedback loops will run up activity levels throughout the system which can go into overdrive, akin to a badly performing motorcar with the accelerator pedal stuck all the way to the floor.

In light of the theory, Marks (2015) proposed a four-armed strategy to halt the obesity epidemic consists of (1) putting a stop to victim-blaming, stigma, and discrimination; (2) devalorizing the thin-ideal; (3) reducing consumption of energy-dense, low-nutrient foods, and drinks; and (4) improving access to plant-based diets. If fully implemented, interventions designed to restore homeostasis have the potential to halt the obesity epidemic.

As the obesity epidemic continues to rage on, with dire projections for the next century (Wang et al., 2008), psychologists are a major contributor to prevention and intervention development. But, frustratingly, individual and large-scale efforts to curb it overall have not been successful, and there have been many calls for alternative or new perspectives to inform interventions (Tylka et al., 2014). Marks' (2015) piece suggests how our efforts can perhaps be focused and most impactful. Homeostatic theory proposes that weight gain is fostered by a COD consisting of body dissatisfaction, negative affect, and overconsumption.

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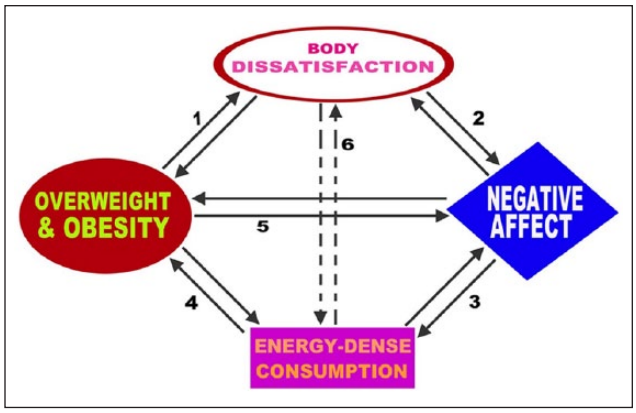

Figure 1. The Circle of Discontent (reproduced by permission from Marks (2015)).

These domains therefore emerge as multi-faceted intervention targets. Below, drawing from this theoretical framework, we will describe practice implications for psychologists. Specifically, we will describe literature on successfully addressing two domains, victim-blaming, stigma, and discrimination, as well as devalorizing the thin-ideal, that are also applicable to weight gain. From the vantage point of clinical health psychologists based in a university, we may be uniquely positioned to consider and implement large-scale approaches that have shown great promise for addressing these core issues.

Victim-blaming, stigma, and discrimination

In a 2009 review paper, Puhl and Heuer documented the incredible scope of discrimination faced by overweight individuals, including in health care settings, the workplace, and media. In addition, they discuss the relatively sparse data on interventions aiming to eradicate these conditions (Puhl and Heuer, 2009). Indeed, the few effective studies that have been published describe approaches primarily delivered to university students. Similarly, the broader literature on curbing rates of victimization and bullying indicate that school-based approaches are most successful (Rigby and Slee, 2008; Ttofi and Farrington, 2011; Vreeman and Carroll, 2007). Overall, it appears that intervening in secondary schools or universities may be an opportune time to target body dissatisfaction and discrimination related to weight more globally.

Large-scale, school-based interventions have been promising in regard to decreasing victimization among pre-adolescents and adolescents (Busch et al., 2012; Kimber et al., 2008). In the Netherlands, for example, the Utrecht Healthy School (UHS) program aimed to comprehensively improve healthy behaviors including eating habits, physical activity, and substance abuse, as well as decreasing bullying (Busch et al., 2012). The UHS approach emphasizes involvement of students, teachers, parents, and administrators, as well as building external connections with an overall goal of health promotion for all members of the school community. With advisement from these stakeholders, learning is interactive and focuses on empowering students to make better choices. UHS was rolled out from 2007 to 2010, and outcome assessment consisted of comparisons from two cohorts of students reporting in 2007 and 2010. Results showed improvements in many of the target behaviors, including increased physical activity and lower rates of bullying and victimization (Busch et al., 2012).

A Social and Emotional Learning (SEL) curriculum aiming to improve mental health and related outcomes like victimization was developed and tested in Sweden (Kimber et al., 2008). SEL, based on cognitive and behavioral methods, focuses on helping students to develop the following five skills: self-awareness, managing one's emotions, empathy, motivation, and social competence. Using a quasi-experimental design, after 2 years of the program, results showed some important differences between outcomes for students in experimental and control schools including decreases in victimization (Kimber et al., 2008).

Importantly, Puhl and colleagues (Puhl et al., 2013) surveyed adolescent recipients of weight-related victimization for their perspectives on intervention. Respondents expressed strong preferences for involving peers in the solution. For example, the importance of teaching student bystanders how to prevent rather than reinforce bullying behavior appears to be a desirable strategy that has also been shown to be effective (Rigby and Slee, 2008; Salmivalli et al., 2011).

Individual approaches

It may also be useful to consider strategies that have been employed directly to victims or those at risk. For example, Vessey and O'Neill (2011) used materials from the US Health Services Resources Administration's Stop Bullying Now campaign to develop a group intervention for children with disabilities, who are at high risk for experiencing victimization. School nurses conducted 12 biweekly sessions with 65 children. Results showed that group members were less bothered by teasing afterwards and also experienced improved self-concept. Similarly, in Hong Kong, a 10-week cognitive behavioral program was delivered to 68 victims of bullying (Fung, 2012). The program yielded mixed results with students reporting decreased victimization although parents and teacher reports did not echo these findings. Overall, these programs offer some suggestions for strategies that psychologists can draw from when addressing victim-blaming in therapy.

Devalorizing the thin-ideal

As Marks (2015) states, the media promotes an unhealthy body image, in which most women seen in magazines and

billboards are visibly underweight (Ahern and Hetherington, 2006). Specifically, the media reinforces the perpetuation of the thin-ideal through the glorification of ultra-thin models, causing those who look to the media for information to internalize this ideal (Thompson and Stice, 2001). The perceived discrepancy between people's ideal and actual body image, as well as the unrealistic nature of the ideal, can lead to body image dissatisfaction (Bessenoff and Snow, 2006; Gluck and Geliebter, 2002). One particularly illuminating study demonstrated that after introducing prolonged television access in Fijian adolescent girls, those with exposure to Western television demonstrated significantly more disordered eating attitudes and behaviors than those without exposure (Becker et al., 2002).

Prevention programs

Thin-ideal internalization is defined as the extent to which an individual "buys into" socially defined ideals of attractiveness and engages in behaviors designed to approximate those ideals (Ahern and Hetherington, 2006) and is one of the most important risk factors for the development of eating pathology (Stice and Shaw, 1994). The Body Project, the most successful eating disorder prevention program, is a 4-session group-based intervention that utilizes the principle of cognitive dissonance. It requires participants to explore the costs of and to reject the thin-ideal, thereby reducing their thin-ideal internalization. Extensive research on the Body Project has demonstrated a decrease in thin-ideal internalization that has led to significant and clinically meaningful reductions in body image dissatisfaction and negative affect (two parts of the COD), as well as 60 percent reductions in *Diagnostic and Statistical Manual of Mental Disorders*' (4th ed.; DSM-IV) eating disorders at 3-year follow up compared to controls (Stice et al., 2013a, 2013b).

A large body of research has demonstrated the efficacy of the Body Project in reducing thin-ideal internalization, body image dissatisfaction, and negative affect in female college (e.g. Stice et al., 2011) and high school students (Stice et al., 2011), although it has been less successful among middle school girls (Rohde et al., 2014). Given its efficacy, efforts have been focused on improving the translatability of this intervention. Recent research has demonstrated support for a train-the-trainer approach to Body Project dissemination. Specifically, when master trainers trained novice trainers to train undergraduate peer leaders, participants showed significantly reduced levels of thin-ideal internalization, body dissatisfaction, and disordered eating at post-treatment and 5-month follow up (Grief et al., 2015). Additionally, Butryn et al. (2014) found that effects of the intervention were not related to facilitator's age, sex, education level, or body mass index (BMI) or the size of the group, which is encouraging for dissemination.

Other efforts to disseminate the intervention have included an Internet-dissonance-based program, which demonstrated similar efficacy to an in-person group intervention at post-test, but improvements were not as well maintained at 1- and 2-year follow ups (Stice et al., 2014). Although the majority of dissonance-based prevention programs have been geared toward the prevention of eating disorders, this recent study of the Internet-based program (*eBody Project*) also demonstrated large weight gain prevention effects, significantly more so than the Body Project, which were comparable to other obesity prevention programs (Stice et al., 2014). Thus, at least for women and girls, these cognitive-dissonance-based programs can reduce body image dissatisfaction, and in some contexts, prevent weight gain. Working toward eliminating obstacles to dissemination of this program may help to break the COD.

Individual treatment

The most obvious and likely effective way of devalorizing the thin-ideal is on a societal level, by diversifying representations of individuals of varying weights in the media and expanding access to larger sized clothing, for example. However, though crucial, this approach is extraordinarily challenging. As these societal concerns are tackled, clinicians can also help to devalorize the thin-ideal on a more individual level. Although not designed to target the thin-ideal directly, Mirror Exposure Therapy is currently used to promote body image acceptance and reduce body image dissatisfaction. During exposure, patients are asked to look at themselves in a mirror while describing their physical appearance in a neutral manner. Studies of mirror exposure have demonstrated significant reductions in body image dissatisfaction among adults with binge eating disorder (Hilbert et al., 2002), as well as overweight and obese adolescents (Jansen et al., 2008).

In conclusion, it is important for psychologists to be aware of effective approaches available to intervene stemming from Marks' (2015) novel homeostatic theory. Indeed, the literature has shown that there are both systemic and individual empirically supported interventions that can be employed by psychologists. In particular, such services can be feasibly and acceptably delivered to adolescents and young adults in school settings. It seems reasonable to suggest initiating large-scale programs in secondary schools and universities that perhaps can even be packaged together to most impactfully address circumstances intertwined with weight gain. Overall, informed by theory, such "culture changes" may be an ideal way to focus prevention and intervention efforts.

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