



Published in final edited form as:

Gastro Hep Adv. 2023 ; 2(5): 626–629. doi:10.1016/j.gastha.2023.02.007.

The Psychology of Behavior Change: A Neglected but Necessary Aspect of Obesity Management

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Obesity has reached epidemic proportions. This has translated to a staggeringly high prevalence of nonalcoholic fatty liver disease (NAFLD), which now represents the most common liver disease encountered by physicians. NAFLD is projected to affect 100.9 million adults in the United States by 2030; it is also anticipated to lead to increasing rates of decompensated cirrhosis, hepatocellular carcinoma, and liver-related mortality.¹ While effective pharmacotherapies for NAFLD do not exist, weight loss of 5%-10% improves hepatic fat, steatohepatitis, and fibrosis. Weight loss management and counseling has thus become a crucial component of physicians' role in treating NAFLD. The purpose of this commentary is to introduce a clinical algorithm for approaching the cognitive aspects of behavior change, which is an important, but often overlooked, aspect of weight loss counseling among patients with NAFLD.

Successfully influencing patients' behaviors is central to weight loss. Calorie restriction and physical activity for 150–200 minutes weekly are well-established determinants of long-term weight loss. Unfortunately, most patients with NAFLD do not lose weight. In general, fewer than one out of 5 patients engaged in hepatology care experience clinically significant weight loss (CSWL, as 5% weight loss from baseline) over 1 year.² In recent years, bariatric interventions have received increasing attention and enthusiasm as potential solutions for these poor weight loss rates. And, they work. Bariatric surgery induces anywhere from 15% to 45% weight loss from baseline, depending on the method.³ However, many patients with NAFLD do not meet bariatric surgery criteria. Furthermore, 7–10 years following intervention, bariatric populations may regain up to 38% of initial weight lost. An overwhelming reason for this is behavioral relapse.⁴

Weight loss is a complex process. Neurohormonal, environmental, and psychological factors influence obesity. Intervening on all 3 domains is vital. Often neglected in the discourse on

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Conflicts of Interest:

The author discloses the following: Maya Balakrishnan has research contracts (to Baylor College of Medicine) from Intercept, Viking, and Novo Nordisk.

Ethical Statement:

The corresponding author, on behalf of all authors, jointly and severally, certifies that their institution has approved the protocol for any investigation involving humans or animals and that all experimentation was conducted in conformity with ethical and humane principles of research.

obesity management, however, is a consideration of the psychological drivers of behavioral changes. Many patients recognize the need to eat less and to exercise more in order to lose weight. However, they describe several cognitive barriers to initiating and maintaining these behavioral changes. Chief among them are cravings, low motivation, unrealistic weight loss expectations, and low self-efficacy. Meanwhile, most physicians are well aware of the importance of calorie restriction to promote and maintain weight loss; they know the optimal target of physical activity as suggested by national guidelines. Very few, however, have received adequate training to recognize, modify, or communicate about the cognitive factors that influence lifestyle changes.

There is a pressing need in the field for clinic-based strategies that can support patients through the psychological process of behavioral change. These strategies would ideally be deployed alongside pharmacologic and bariatric interventions to support long-term weight loss. A theoretical understanding of behavioral psychology is important for developing such strategies. The dual process theory offers one paradigm for understanding. It also offers insight into cognitive factors that can be intervened upon to support patients in making behavioral changes for weight loss.

According to the theory, 2 parallel cognitive processes guide eating behaviors: an impulsive process and a reflective process.⁵ The impulsive process prompts unconscious behaviors. Impulsive behaviors are triggered by environmental stimuli, habit, and emotional reactions. These behaviors tend to be automatic and the outcome of ingrained associations people have between cues related to foods (ie the sight, smell, or context of food) and the anticipated reward of consuming them. They represent eating behaviors where, for example, a person eats a piece of cake “without thinking”. Impulsive processes tend to dominate, especially when a person is tired, hungry, or stressed and does not have the cognitive capacity to contemplate an action.

Reflective processing, in contrast, prompts intentional behaviors. Reflective behaviors are the outcome of higher order executive functions. They represent eating behaviors where, for example, a person sees a piece of cake but deliberately avoids it in favor of a healthier option. The pathway toward a reflective eating behavior requires that a person possesses a knowledge of disease, an awareness of healthy eating, and a high degree of motivation and self-efficacy; it also requires a high capacity to self-regulate one’s behaviors.

Both the impulsive and reflective systems need to be modified for a patient to move from habitually unhealthy to habitually healthy behaviors. This requires reprogramming impulsive processing such that automatic unhealthy behaviors are inhibited and healthy ones become the default. This also requires a strengthening of several cognitive capabilities important to reflective processing. Current clinical practice relies on a prescriptive approach to weight loss counseling.⁶ This focuses on educating patients about NAFLD and what healthy eating and physical activity entail. While this information is necessary, it is not sufficient to make health behavioral change. Indeed, empiric data show that our current approach inadequately supports patients with the cognitive behavioral support necessary to make the change. Survey data collected among patients actively engaged in hepatology care show that most have low levels of motivation, low levels of dietary and physical activity, self-efficacy, and

high level of impulsivity.⁷ Compounding the problem is a tendency toward “all or nothing” thinking frequent among patients trying to lose weight wherein slow weight loss progress or behavioral slips produce feelings of failure; this can lead to a cycle of negative thinking, loss of motivation, and complete behavioral relapse. Lastly, up to 23% of patients with NAFLD may suffer from binge eating disorder or severe depression,⁸ both of which exacerbate impulsivity, hinder behavioral change, and require psychiatric treatment. Given these data, it is no surprise that current counseling practices are not associated with CSWL among patients with NAFLD.⁹ Patients clearly need more help.

Fortunately, years of obesity research have produced cognitive techniques for helping patients strengthen behavioral skills.¹⁰ Stimulus control and cognitive restructuring are 2 teachable strategies that can help break impulsive behaviors. Stimulus control is a method for helping patients recognize and remove environmental triggers for unhealthy eating behaviors and increase cues for healthy ones. Cognitive restructuring additionally helps patients become aware of and moderate dysfunctional diet, weight, and weight loss beliefs and expectations. Dysfunctional expectations represent a common psychological barrier to behavioral adherence among patients with obesity. One example are patients’ overly ambitious weight loss expectations wherein they may anticipate that behavioral changes could lead to nearly 30% weight loss (as opposed to the more modest reductions necessary for clinical improvement) and beliefs that such reductions will produce drastic social and personal benefits.¹¹ When patients have such high expectations and fail to meet them, they are likely to give up. Cognitive restructuring can help to alter patients’ unrealistic beliefs to ones that are more accurate and balanced, thus improving their long-term adherence to behavioral changes.

Goal setting, self-monitoring, and problem-solving are teachable techniques for bolstering self-regulatory capabilities.¹² Goal setting is a method for helping patients set small, measurable, and realistic behavioral goals that build over time. An example might be for patients to set as a goal achieving 5000 steps daily and gradually increasing to 10,000 steps daily. Goal-setting breaks down what can feel like overwhelming lifestyle changes into smaller, doable steps; it also helps patients move away from “all or nothing” thinking. Self-monitoring is a useful technique for augmenting patients’ behavioral self-awareness and triggers; it also serves as an important adjunct to goal setting, by encouraging patients to measure their progress toward behavioral goals. An example of this is to use a pedometer to track steps. Another is to train patients to track foods and beverages consumed; and also to record the context for consumption (ie level of hunger, emotions, and activities at the time of eating), which helps identify and correct eating patterns and contingencies. Problem-solving is a method of analyzing a chain of events that lead to a problematic behavior (for example, eating junk food). By doing so, patients can learn to target one or more weak links in the chain (for example, not having healthy alternatives at home), to generate potential solutions, and to implement the most feasible one.

Gastroenterology’s challenge is how best to translate and to implement these (and other) strategies in our clinics. The scale of NAFLD warrants a lean approach to disseminating cognitive interventions. This means developing ways of identifying and targeting patients’ specific cognitive behavioral needs. Figure outlines one potential approach to doing so

in hepatology clinics. A prudent first step is to screen all patients for binge eating disorder and depression and link those affected to specialized psychiatric care. The 9-item patient health questionnaire and 7-item binge eating screener are short, clinically feasible screeners available for this purpose.^{13,14} Among those patients who screen negative, it is then reasonable to observe their weight loss progress with current, prescriptive counseling approaches for 6 months. Those who do not achieve CSWL will likely have heterogeneous cognitive behavioral needs. This is also the group with greatest need for research to understand how best to approach screening and targeted management. Some patients in this group may need specific techniques to address, for example, high impulsivity or low self-efficacy. Others may have multiple adverse cognitive determinants requiring intensive, multicomponent interventions modeled after the Look AHEAD or Diabetes Prevention programs. While methods for cognitive screening exist, we need to learn how best to adopt and streamline them for the hepatology context.

Ultimately, the clinical approach to cognitive behavioral management requires input and comanagement with multiple disciplines, including dietitians, health educators, weight loss counselors, and psychologists, who have training in the cognitive techniques important for weight loss. However, physicians will need to take the lead in identifying the need for and advocating for cognitive behavioral support in patients. This is particularly important given research showing that patients are highly responsive to physician-led weight loss counseling.¹⁵ To this end, physicians may need to receive basic training in how to communicate cognitive behavioral techniques effectively, but also efficiently given the real life-time limitations of clinic. Motivational interviewing may represent one teachable method. Digital platforms represent another potential method of dissemination.

The road to weight loss is undoubtedly difficult. Neurohormonal responses to weight loss may thwart patients' best efforts. The obesogenic environment—full of calorie-dense temptations and often unfavorable to regular physical activity—serves as a constant challenge to healthy behavioral adherence. Managing obesity requires that we address these biological and social factors with a combination of medications, bariatric interventions, and public policies. At the same time, we should not neglect the psychological aspects of weight loss and ensure our patients with NAFLD receive the cognitive behavioral support they need to be successful.

Funding:

Maya Balakrishnan is supported in part by the National Institute on Minority Health and Health Disparities under award number K23MD016955. The content presented is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health.

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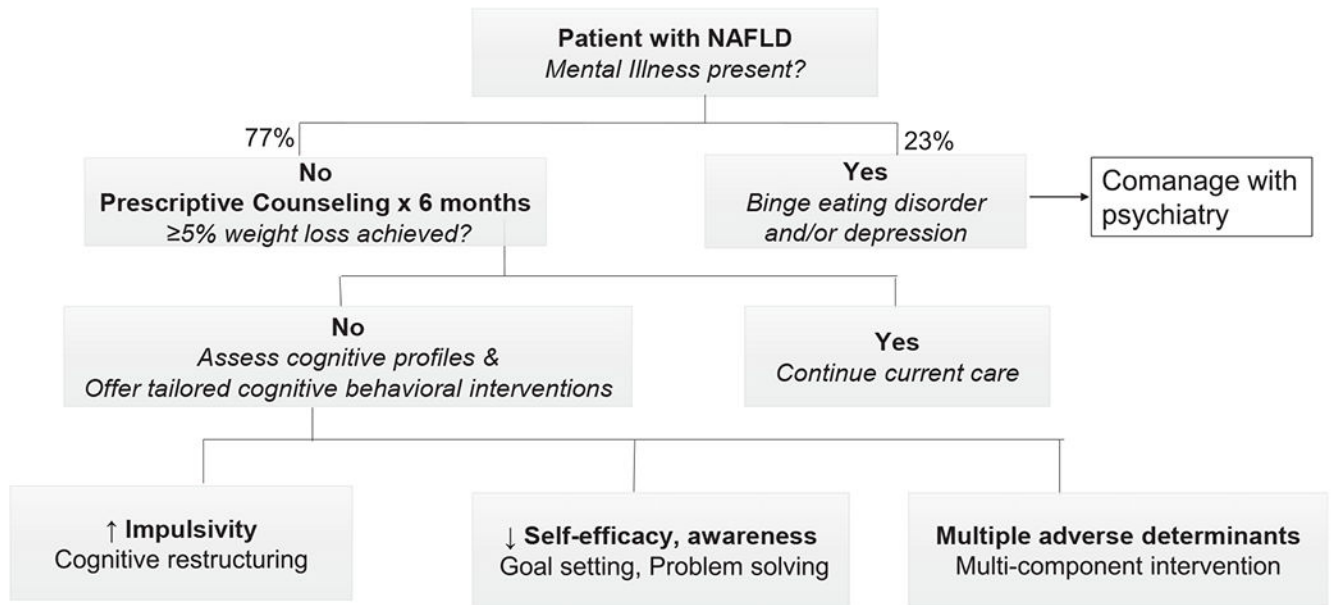


Figure.
Proposed clinical approach to evaluating and targeting cognitive behavioral determinants of weight loss in NAFLD.