

The human psychology of eating: An intuitive approach to food

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Abstract

Society's altered and un-natural relationship with eating has contributed to the current "obesogenic" food environment. It must be taken into consideration that the human psychology of eating and the dining experience are multifaceted. By being over stimulated and conditioned with convenience, we lose our ability to be mindful when eating. Whether it be through dogmatic dietary philosophies being marketed to the general public, poor body image, an abundance of convenient and cheap processed food, or an overall increase in daily stress, we as a society suffer from negativity and fear around food. The purpose of this project and literature review is to evaluate the human relationship with food and how it promotes positive or negative eating behaviors. It is suggested that a multidimensional approach, beyond the reduced nutritional and clinical model, is necessary for fostering a healthy relationship with food that encourages proper appetite-regulation and eating behaviors.

Keywords: mindfulness-based interventions, self-determination theory, French paradox, eating behavior, psychology of eating, intuitive eating, internal and external cues

The psychology of eating: An intuitive approach to food

Human eating behavior is complex and multidimensional, yet as a society, we place a dichotomous perspective on food that equates it to either being “good” or “bad.” As humans, we have the ability to savor and enjoy our food beyond biological needs for nourishment and caloric energy. Unlike other animals who are more opportunistic and only eat to survive, we have more choice when it comes to food. Instead of tapping into the intuitive wisdom of our physical and psychological signals, our societal relationship to food has become one of overindulgence or deprivation as a way to cope with external stressors. We have overridden our natural, internal hunger signals with external cues that dictate what we eat, how much, and when.

This altered and un-natural relationship with eating has contributed to the current “obesogenic” food environment (Timmerman & Brown, 2012). By allowing continuous external cues to control our eating habits, we now exist in a mindset that is conducive to a compounding fear of overeating. The connection between food and psychology is powerful as Woods eloquently stated, “after all, where would psychology be if not for the positive reinforcing qualities of food (1991)?” Food can be argued as the ultimate reinforcement. When we do something well, we are rewarded with a dessert or we go out to eat to celebrate a special event; we “deserve” to indulge. This is all intertwined into the complexities of human eating behavior. Using food in celebration is not necessarily a bad thing though problems arise when we consistently turn to food as a way to compensate for stress or areas lacking in our lives.

The human psychology of eating is multifaceted. By being over stimulated and conditioned with convenience, we lose our ability to be mindful when eating. “Mindfulness is a

quality of consciousness that is characterized by continually attending to one's moment-by-moment (or bite-by-bite) experiences, thoughts, and emotions with an open, non-judgmental approach (O'Reilly, Cook, Spruijt-Metz, & Black, 2014).

Similar to drug tolerance, humans can also learn to make internal, anticipatory, physiological responses to food that help minimize the impact of the meal on the body (Woods, 1991). In the anticipation of a meal, we can learn to limit the amount of food eaten, to recruit the protective stress-response system while digesting, and to limit postprandial behaviors to minimize homeostatic disruption (Woods, 1991). That is to say, we have internal defenses against eating too much food (and therefore stressing the body) but our reliance on external cues may override this ability.

It has been said, "Americans have an eating style that is low in pleasure and high in health consciousness" (Smith & Hawks, 2006). Whether it be through dogmatic dietary philosophies being marketed to the general public, poor body image, an abundance of convenient and cheap processed food, or an overall increase in daily stress, we as a society suffer from negativity and fear around food. Food is a source of stress and anguish yet we inappropriately turn to it for comfort and numbing. Why? Overeating and obesity are rooted in causes beyond caloric and macronutrient excesses. Those who are obese (or succumb frequently to overeating) may have poor recognition of physical hunger and satiety cues, which then gives rise to the inability to self-regulate eating behavior (O'Reilly, Cook, Spruijt-Metz, & Black, 2014). This dysregulation theory suggests the reliance on external cues for eating. The psychosomatic theory suggests emotional overeating is caused by the inability to distinguish between emotional arousal and physical hunger (O'Reilly, Cook, Spruijt-Metz, & Black, 2014).

Emotional eating is commonly discussed but rarely addressed. It is hypothesized to arise from a “maladaptive emotion regulation strategy that involves indulging in immediate impulses to eat in order to suppress negative feelings” (O’Reilly, Cook, Spruijt-Metz, & Black, 2014). Determining the source of those negative feelings and addressing them is beyond the scope of this project and report, but what will be discussed is ways to be mindful when eating in an emotionally aroused state.

Chronic dieting has also guided us away from nourishing ourselves intuitively. In addition to being a precursor for eating disorders, chronic dieting places the body in a perpetual state of stress and deprivation, both mentally and physically. Furthermore, chronic dieting often stems from poor body image, which can then further complicate our relationship with food. Food anxieties are typically coupled with dieting, which results in a decrease in our natural ability to experience enjoyment from food. Researches Smith and Hawks state, “dieters who describe less pleasure related to food are more likely to show signs of eating disorders, lower psychological well-being and more body-dissatisfaction (2006).” In fact, the highly “health conscious eater” may also experience the most food anxieties (Smith & Hawks, 2006).

The first blog post titled, “What’s your relationship with food?” begins the conversation around food relationships and encourages the reader to think about how they view food. This is the first introduction to the psychology of eating and sets the stage for the subsequent posts about food relationships and how food can be a positive and intimate experience. The audience for these posts is intended to be female millennials as this is the population that tends towards disordered eating the most and is targeted frequently by the media (Gousse, 2011). The blog post language is meant to be quirky, conversational, and attention grabbing with actionable insight.

A multifaceted approach, beyond the reduced nutritional and clinical model, is necessary for fostering a healthy relationship with food that encourages proper appetite-regulation and eating behaviors.

Methods

For this project and literature review, databases used included LIRN, PubMed, BioMed, and Boolean searches through Google Scholar. All studies were in English and there were no publication date exclusions. Search terms included psychology AND eating, food AND relationships, mindful AND eating, intuitive AND eating, CPIR, hunger-based AND eating, gut AND brain AND axis, disordered AND eating, GI AND hormones, enteric AND nervous AND system AND eating, French AND paradox, mindfulness-based interventions AND eating, MBIs AND eating, external AND eating, hunger AND stages, human AND eating AND behavior, Diet AND Quality AND Index (DQI), Dietary AND Diversity (DD), food AND enjoyment, food AND anxieties, eating AND anxieties, cravings AND obesity, intrinsic AND extrinsic eating, cooking skills, cooking AND eating habits, and stressed AND eating.

Literature Review

Stages of hunger

The blog posts titled “Why we fear hunger: Lessons from the French” and “Internal vs. External cues: Intuitive eating and why it’s so hard” discuss the sensation of hunger and how it is an important part of the eating experience. The first post points out flaws in the common advice of not waiting until one is hungry to eat. The new premise is that hunger need not be feared and that it is actually an important step to becoming in-tune with our bodies. The popular concern is that if one waits until they are hungry to eat, they may lose control and eat more than needed. While a valid concern, part of improving one’s relationship with food involves becoming

comfortable to the body's natural signals and cues. This means understanding hunger, what it feels like, and what triggers it.

The blog post about internal and external eating cues welcomes the reader to tap in to their body's natural communication and feedback. It also encourages non-violent communication with one's self because we can not be expected to understand our internal cues right away. There is a lot of conditioning that must be adjusted, which will happen over time.

Part of the eating process includes the preingestive physiological response to the anticipation to food. This external aspect of the eating experience is given little consideration yet it dominates our eating behaviors. Our body responds to food well before we take the first bite (Mattes, 1997). The cephalic-phase of eating involves secretions that are triggered by the sensory properties of food (sight, smell) and they can shape the body's response to the anticipated meal by enhancing nutrient digestion, absorption, and utilization (Abdallah, Chabert & Louis-Sylvestre, 1997).

It has been found that humans begin secreting insulin as soon as we start eating yet before any of the ingested fuel reaches the blood. This insulin is referred to as cephalic insulin because it is triggered by food-related stimuli (taste, smell) which act on the brain and thus increases insulin secretion (Woods, 1991). The blog post about internal versus external cues addresses this external trigger of physiological responses that suggest hunger. This occurs before any of the nutrients reach the pancreas. When animals "sham" eat, meaning they see and chew their food but are not allowed to swallow, insulin is still released (Woods, 1991). This cephalic insulin secretion develops early on and can encourage an imbalance that can continually stimulate appetite. In obese individuals, this cephalic response is exaggerated which then encourages them to overeat in an attempt to increase adipose stores (Woods, 1991). Chronic dieting or restrained

eating, while overweight or obese, continues to exaggerate this response because in a biological sense, the body thinks it needs to increase fat storage for survival (Woods, 1991).

While cephalic-phase insulin release (CPIR) is a natural, biological occurrence, it can be overstimulated by recognized and acknowledge external cues. Hypoglycemia is one example of how the continued cephalic secretion of insulin can inappropriately overstimulate appetite (Woods, 1991). The CPIR can be stimulated by a variety of external factors, including the sight and smell of food and persuasive advertising. This lays the groundwork for the problem of external versus internal eating.

Internal eating follows the guide of the hunger scale. The goal is to respond appropriately to internal hunger cues in order to become comfortably full and satiated, instead of overeating to the point of feeling sick.

Hunger Score	Description
1	Starving, weak, dizzy, headache, lack of concentration
2	Irritable, cranky, very hungry, low energy, lots of stomach growling
3	Strong urge to eat, stomach growls a little
4	Feeling a little hungry – thinking about food
5	Body feels fueled (starting to feel satisfied), neither hungry nor full
6	Fully satisfied - little full, but pleasantly full
7	A little uncomfortable, but could still eat additional items
8	Feeling stuffed
9	Feel very bloated - very uncomfortable, stomach hurts
10	Feel sick from overeating

Figure 1. Hunger Scale

Stress, emotions and external eating

The blog posts titled “Why we fear hunger: Lessons from the French ,” “ Internal vs. External cues: Intuitive eating and why it’s so hard,” and “The problem with dieting and labeling foods as ‘bad’” address the topic of external and emotional eating. These three posts introduce

the idea of shifting one's perspective and thought process when it comes to eating. Instead of fearing hunger and responding to external stimuli, readers are encouraged to turn inward.

The blog post about labeling foods as bad discusses the problem with villainizing foods and food groups. This perpetuates further food anxieties and promotes even more stress surrounding eating.

It is no surprise that external eating has been found to be a significant factor in those who are overweight, obese, or who binge eat.

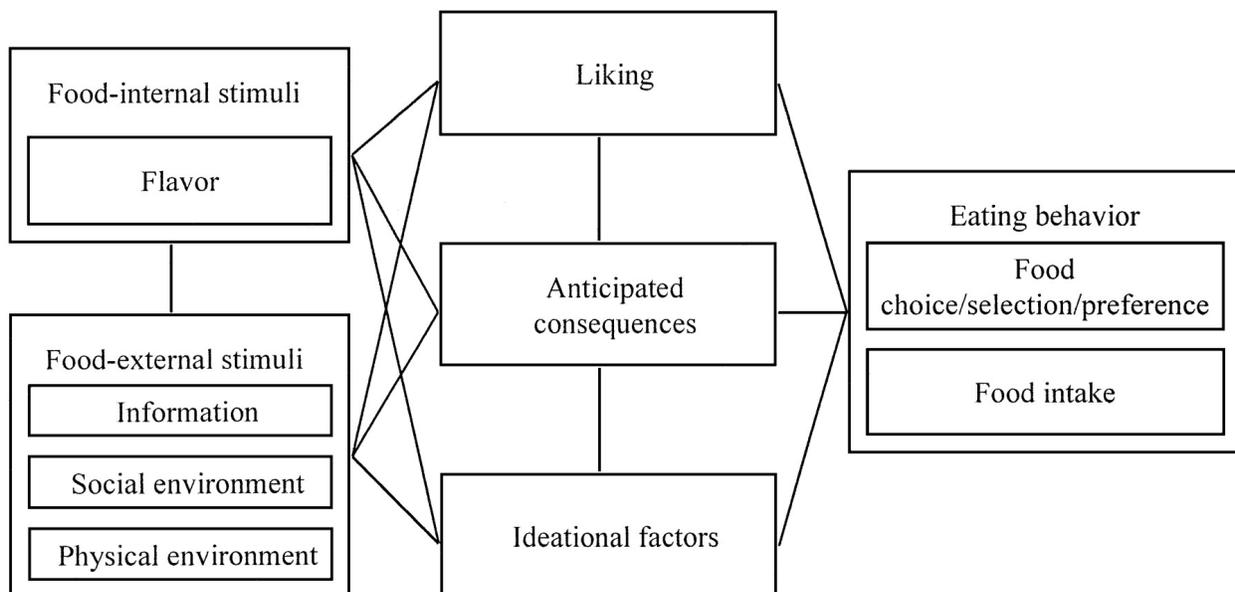


Figure 2: Hypothetical Model of Eating

The externality theory suggests that those who “engage in external eating overeat due to a heightened sensitivity to external food cues” (O’Reilly, Cook, Spruijt-Metz, & Black, 2014).

When in a state of stress or emotional arousal, external food cues can become exaggerated and the ability of the individual to resist these cues decreases. The act of eating resembles “aspects of a real or potential stress situation for the body,” meaning meal-related stress can increase the same circulating stress hormones that release in other states of stress (fight or flight) (Woods, 1991). The most well known stress hormone, cortisol, is associated with weight gain,

particularly around the midsection. When we give in to external hunger cues in response to a stressful situation, we compound the stress within our body and further reinforce the negative eating behavior.

Chronic stress alters the gut microbiota and intestinal barrier, resulting in leakage and increased circulation levels of immunomodulatory bacteria cell wall components (Cryan & Dinan, 2012). Mood disorders, including depression, have been associated with this increased bacterial translocation (Bengmark, 1998; Buhmann, Roux, & Bueter, 2014; & Cryan & Dinan, 2012). The resulting mental stress can further compound internal stress and trigger eating in response to external cues. This emphasizes the importance of the gut-brain axis in response to stress. While the gut-brain axis and its connection to stress is beyond the scope of this project and review, it is still important to note that the stress response can have a profound impact on food relationships and nutrient assimilation.

There is a strong connection between binge eating and being in a stressed state. A binge is characterized as a “discreet episode of rapid and excessive food consumption not necessarily driven by hunger or metabolic need” (Mathes, Brownley, Mo, & Bulik, 2009). A binge is typically accompanied by a sense of loss of control; some even say they do not realize what they are doing until it is too late. Food anxieties can perpetuate a chronic state of dieting and deprivation, which promotes stress surrounding most eating experiences and thus leading to a binge episode. Food deprivation has been studied extensively in animal models and once food is reintroduced ad libitum, their behavior mirrors that of humans. They eat rapidly and large amounts over a period of time (Mathes, Brownley, Mo, & Bulik, 2009). What is unclear is the emotional state of the animals. While various forms of stress can be replicated and studied in regards to animal eating behavior, it is difficult to account for perceived emotional stress. Binge

eating alone was not the focus of this project, however, each blog post does include an actionable tip for how to practice mindful eating and ways to reduce stress and promote a relaxed state. In addition to there being emotional benefits to addressing food anxieties, there are positive physiological and neurobiological outcomes as well.

When eating externally and in a stressed state, we further reinforce a poor response to food and to extrinsic hunger cues. Eating habits and behaviors are simultaneously influenced by physiology, acquired preferences, social and cultural norms, environment (food price, availability, seasonality), and advertising (Teixeira & Mata, 2011). Combined, these forces can work against natural eating regulation by altering the psychological process when forming relationships with foods. Fostering a healthy relationship with food from a psychological perspective involves “implementing one’s intentions to promote more mindful eating regulation” (Teixeira & Mata, 2011).

Mindfulness-Based Interventions (MBI’s) and Self-Determination Theory (SDT) for emotional and external eating

It has been suggested that motivation and intention are key factors to eating healthfully and well. There is both a connection and distinction between being mindful when eating and being motivated. One can be motivated to eat for health, which is then supported by mindful eating, however the simple act of being aware when eating can have benefits beyond being motivated for a desired outcome. Connecting mindfulness with motivation is key because without mindfulness, motivation can actually promote a health-conscious eater with food anxieties.

Overeating and obesity have been associated with mindless, extrinsic eating whereas under-eating and restriction have been associated with obsession and suppression of intrinsic

hunger cues (O'Reilly, Cook, Spruijt-Metz & Black, 2014). In both instances, mindfulness-based interventions (MBI's) have been used successfully to restore natural eating habits and promote a healthy relationship with food. This return to adequate regulated eating can further promote weight loss (or weight gain when necessary).

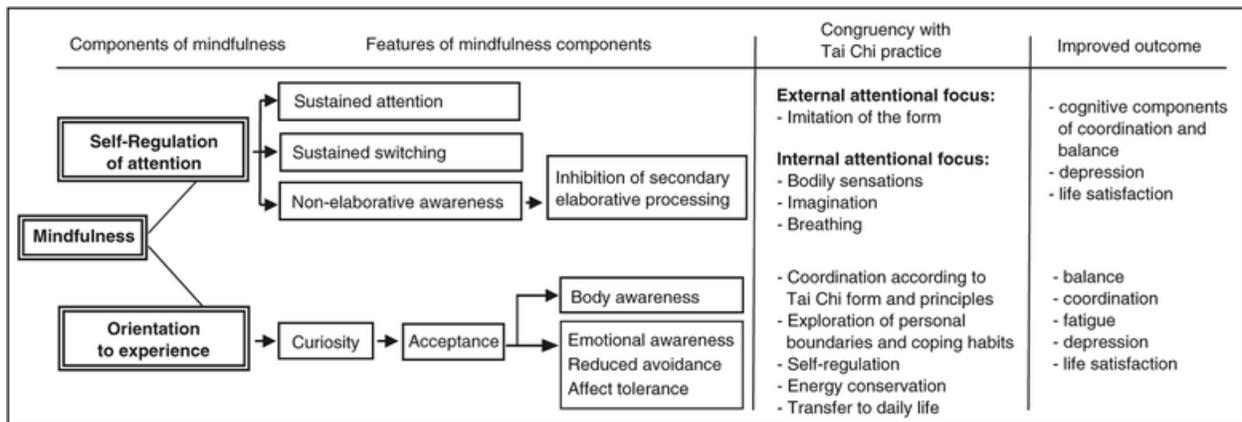


Figure 3: The two-component model of mindfulness for Tai Chi but applies to food behaviors as well

Hedonic eating (eating for pleasure, not need) and stress eating are deeply rooted in a complex network of reinforcing factors. MBI's work by bringing the eater back to the experience of eating. Simple exercises involve noticing the sensation of eating an individual food or ingredients. The eater is asked to notice the smell, look, texture, mouth-feel, taste, and enjoyment felt while eating and are encouraged to eat slowly while seated, with little distractions. Mindful eating means focusing on the task of eating while being in low-stress state. Instead of eating on the go, in front of the television, while driving, or while upset, eaters are encouraged to make the act of dining the main event. Unlike other animals that “feed,” humans have the ability to make choices and to dine. MBI's attempt to break the connection between mindlessly eating for comfort or for stress relief (O'Reilly, Cook, Spruijt-Metz, & Black, 2014; Timmerman & Brown, 2012). It is believed that humans, while able to experience enjoyment

beyond physiological need, have an intuition for eating that further relies on hunger cues, which can be highlighted through a mindful approach.

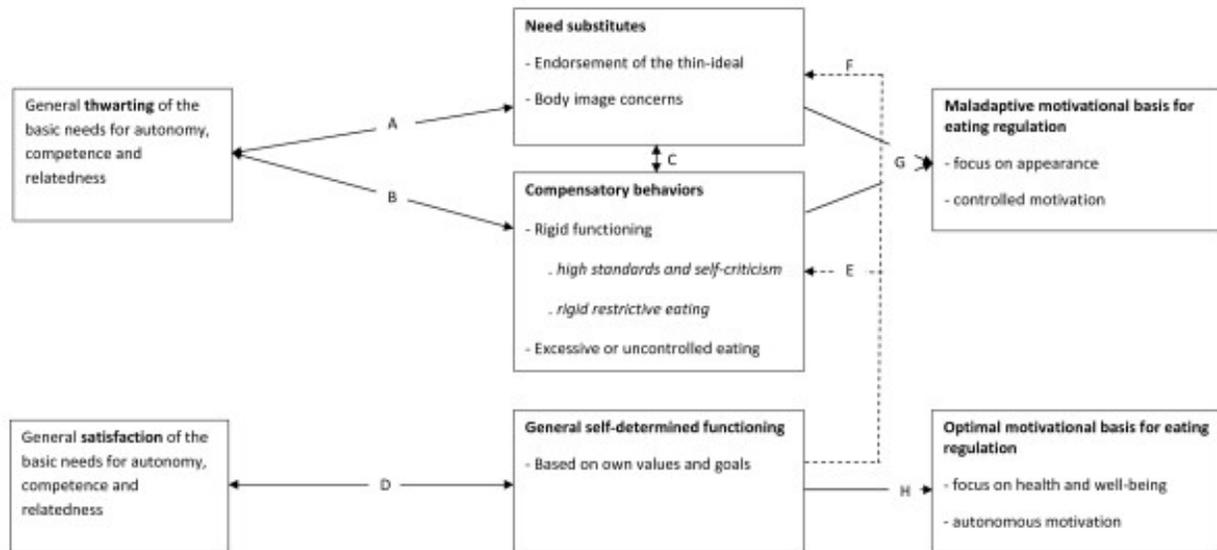


Figure 4: Self-Determination Theory

Self-Determination Theory (SDT) focuses on the motivational aspect to eating regulation (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). SDT aims to explain the etiology of poor body image and disordered eating and to understand the optimal regulation of eating for health weight management (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). In Western society, body image issues and restrictive eating are on the rise, as is obesity and being overweight. The commonality between these two opposite problems is poor eating regulation and an extrinsically altered relationship with food. Unlike other approaches to remedying eating regulation, SDT provides broader applications that aim to address the more general problem of eating and motivation. SDT applies to a wide variety of contexts and involves a multifaceted approach that includes education, exercise, work, relationships, psychopathology, and psychotherapy (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). It is a framework used to understand all the different behaviors associated with eating.

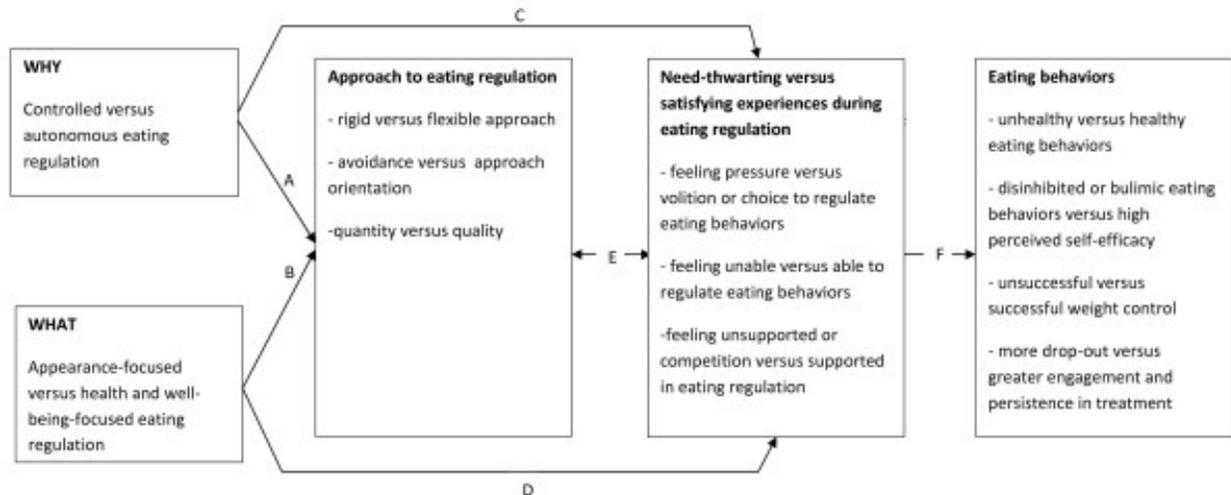


Figure 5: Role of basic psychological need satisfaction vs suppression/thwarting in ongoing eating behavior regulation

SDT involves three key assumptions; humans are inherently proactive and can act on internal and external cues, humans steadily move towards increased psychological growth and integration, and finally that social context can support or hinder growth and integration (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). What sets SDT and MBI's apart from other nutritional approaches is that they both address the psychological need of eating, beyond the physiological. Different eating outcomes can be achieved by using a more differentiated approach to distinguish between different types of motives (autonomous and controlled) and goals (internal and external) (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). Purely clinical and nutritional approaches overlook the natural need for satisfaction, which is why structured dietary plans often fail. All the blog posts in this project touch on the idea of eating relating to psychology, beyond physiology.

Disordered eating and weight management are often approached with interventions that rely on a self-control model and behavior change (Teixeira, Patrick & Mata, 2011). These two principles fail to positively modify daily eating habits to promote long-term habits because

they encourage restriction and a dogmatic approach to eating. Dogmatic eating philosophies have been made popular by the media and government over the past few decades. These include the low-fat, high-carbohydrate craze (and government recommendation), the Atkins diet, the South Beach diet, and extreme bulking or cutting protocols in the bodybuilding world, to name a few. The goal-based utility of these diets are given precedence over long-term benefits and changes. Self-regulatory skills including self-monitoring, stimulus control, and contingency management are used to encourage behavior change yet little is done to address what is needed for long-term maintenance for sustained motivation and support (Teixeira, Patrick & Mata, 2011). External incentives are not long lasting (praise, rewards), where as personalized self-motivation can be. In fact, external rewards can further reinforce undesirable eating habits.

While the blog posts do not address MBI's and SDT specifically, they do create a bigger picture of what eating with awareness actually looks like to the average person. Mindfulness suffers from being seemingly abstract; it can be difficult for someone to grasp outside of a counseling session. The blog posts aim to simplify the idea and raise awareness that might inspire the reader to do further research and find what works for them.

French paradox

From a cultural perspective, the French have continued to rely on their internal hunger cues while emphasizing quality and diversity in their diets (Rousset & Zhu, 2008). This is discussed in the blog post titled, "Why we fear hunger: Lessons from the French." This blog post lays out several concepts the French incorporate into their everyday lives, including never eating on the go, no snacking, slowing down, and allowing for pleasure.

The Diet Quality Index (DQI) has been used to compare the standard French diet to that of Americans (Drewnowski, Henderson, Shore Fischler, et al., 1996). The DQI measures

the “degree of compliance with a healthful diet as defined by the dietary recommendations issued by the US federal government agencies” (Drewnowski, Henderson, Shore Fischler, et al., 1996).

The Dietary Diversity (DD) score (sometimes called the Household Dietary Diversity Score or HDDS) is used to score the number of major food groups consumed daily. Ironically, the Val-de-Marne Study, using both the DQI and DD score, found that the typical French diet failed to meet most of the guidelines set in place by the USDA, yet their culture as a whole suffers from fewer lifestyle and diet related chronic health problems (Drewnowski, Henderson, Shore Fischler, et al., 1996). The French diet, as scored by the DD scale, was far more varied than the American diet, even though it included significantly more saturated fat and, at times, more calories. It has been suggested that these results indicate that diet variety and ingredient quality are more indicative to overall health.

The French approach to eating is similar to the anti-diet philosophy of intuitive eating in that they follow a hunger-based approach to eating. Not surprisingly, this relies on internal hunger cues as opposed to external cues (Wansink, Payne & Chandon, 2007).

While research is underway to identify the singular dietary components that may be contributing to the longevity of the French, a more holistic, high level view of their approach to eating offers wisdom that can be put into action. The French follow a non-prescriptive form of eating that allows them to eat in accordance to their personal cravings and taste preferences (Smith & Hawks, 2006). They also focus on food quality and maintain a low-stressed and relaxed eating state by eating slowly and socially. Regardless of what they are eating, this combination of high food quality and a relaxed state while eating seems to encourage a healthier lifestyle with lower rates of chronic disease.

Perhaps one of the most telling observations is that the French also consistently display more enjoyment with eating, while eating slowly and consciously with appreciation and delight.

Cooking skills

The simple recipe blog posts included in this project encourages the connection between being able to feed oneself healthfully and a positive food relationship. There are two easy recipes included in the blog series as it currently stands. The plan is to continue compiling original recipes and editorial posts about reducing food anxieties in order to make cooking more approachable to the reader.

One of the common road blocks people have, especially young adults being on their own for the first time, is feeling like they are not equipped with the tools they need to cook and cook well. There is one blog post titled “Keep it simple: The only kitchen tools you need,” and it aims to help the beginner know what they need in their kitchen (and what they do not need) in order to begin learning how to prepare meals. Another goal of this post is to inspire the reader to re-evaluate their own kitchen and perhaps re-discover some kitchen tools they were not comfortable with previously or did not know how to use.

Research has demonstrated a strong connection between healthy eating habits and a desire to learn cooking skills for both enjoyment and health (Leal, de Oliveira, & Rodrigues, 2011; & Eertmans, 2001). Leal, de Oliveira, and Rodrigues gathered the self-reported cooking proficiency scores of 390 Portuguese adolescents and assessed their desire to cook and expand their skill set (2011). It was found that those with better cooking habits, and the desire to learn, tended to follow to a healthy Mediterranean diet and consumed less meals outside the home (Leal, de Oliveira, & Rodrigues, 2011; & Katsarou, Triposkiadis, Skoularigis, Papageorgiou &

Panagiotakos 2014). These same participants reported a high level of enjoyment when it came to cooking and it was predicted that those who learned cooking skills early on would develop and maintain healthy eating habits in the future.

The ready-made meals and processed foods that emerged during the industrial revolution, gaining popularity after World War II, have contributed to the decline in the desire or need to learn cooking and meal preparation skills. Many of these pre-made meals are lacking in nutrients but are cleverly crafted by food scientists to leave the eater craving more. One study evaluated 1,017 adults for cooking skill and the frequency of ready-made meal consumption (van der Horst, Brunner, & Siegrist, 2011). It was found that the lack of cooking skills was a barrier to healthy eating and meal preparation. This same study also suggests there to be a connection between ready-made meal consumption and overweight prevalence (van der Horst, Brunner, & Siegrist, 2011). The researchers predicted that the skill of cooking will continue to decline in the future and that later generations will become more and more reliant on pre-packed and processed foods.

Cooking and food preparation skills go beyond improved diet composition to encourage greater independence and empowerment in other areas of life. Research exploring the transference of cooking skills in the home found that children who learned cooking skills from their families demonstrated a healthier relationship with food and made better meal choices when outside the home (Lai-Yeung, 2015).

Implications

Further study, particularly into MBI's and SDT, is necessary in order to help people improve their relationship with food. Mindful and intuitive eating as a therapeutic intervention can help people overcome their food anxieties and find joy in eating once again. Historically, the

nutrition profession was intertwined more with that of a healer, utilizing edible herbs and botanicals for health rather than focusing on nutrient composition. Humans are naturally designed to eat intuitively and it was not until the past hundred years or so that the field of nutrition became a necessity. If people were to return to the principles of mindful, intuitive eating, there might be a decrease in food anxieties and chronic disease, less processed and fast-food consumption, and an increase in food enjoyment and overall wellbeing.

The food industry has a powerful influence over society with advertising, new food innovation, decreased production costs, and ever increasing availability. Many processed foods found in convenience stores are considered more affordable than whole ingredients, therefore demonstrating the flawed priority of quantity over quality and money over health. Should society as a whole begin to move towards a paradigm of self empowerment through cooking and homemade meals, big industry would have to take notice. Unfortunately, we have been so indoctrinated into prioritizing convenience over quality that a large societal shift is unlikely.

There is evidence that adolescents who learned basic cooking skills at a young age and who are raised in a household where cooking at home is encouraged will go on to adopt, and maintain, healthy eating habits later in life. By learning to cook for themselves, independence and self-responsibility for health is promoted. The implications of this type of research is profound. It demonstrates not only the importance of family or guardian involvement in teaching food preparation but it points to the possibility of structured education programs in schools that teach basic cooking skills and nutrition. Cooking programs for school aged children can help promote healthy eating habits and food relationships early on that will last a lifetime. It has been found that cooking programs in schools have a positive influence on children's food preferences, attitudes, and behaviors (Hersch, Perdue, Amrboz & Boucher, 2014). Funding in

public schools can be a source of opposition for cooking programs but as more schools implement cooking and nutrition education, the benefits will become measurable and support will strengthen.

An improved relationship with food promotes positive behaviors beyond eating. By understanding the reasoning behind certain maladaptive eating habits, whether that be emotional, economical, social, or a result of external stimulation, changes can be made that build upon one another. Taking small steps to eat with awareness can improve productivity and satisfaction in life because less time will be spent on suffering from food anxieties. It opens the door for a more profound life experience by shunting negative energy away from food insecurities and towards empowerment.

Conclusions and Recommendations

The Western approach to food and dining is rooted in low-cost convenience and quantity over quality. Since the early 1980s, Americans have been eating, on average, about 30 more calories per day (Levitsky & Pacanowski, 2011). This may not seem like much but that equals 10,950 more calories (or a steady 3-pound weight gain) each year. This gradual increase has been attributed to poor food choices, mindless and external eating, an increase in processed food production, and perhaps a decrease in exercise. But why are we making these choices? We know we are fatter than we were 20 years ago, and now the diet industry is using that to fuel a fear of food that perpetuates deprivation and self-punishment. It is a fierce cycle that is constantly supported through media and advertising.

As consumers, we have the “freedom to buy what we want, eat what we want, drink what we want, and raise our children as we see fit” (Levitsky & Pacanowski, 2011). At least, that is what the food and restaurant industry wants us to believe. While true, this premise glazes over

the problem of external influences on eating behaviors and choices that are perpetuated in today's society. The food industry cleverly markets to our senses and encourages an awareness to external cues of hunger that overrides our innate and internal hunger drive. We then punish ourselves for a "lack of willpower" which in turn leads to deprivation and subsequent binging.

The psychology of eating through the rise of intuitive eating initiatives and mindfulness-based practices has been receiving more attention in recent years. We are beginning to understand how and why our internal hunger cues are being overridden by environmental triggers. This promotes eating controlled by emotions and cravings because food becomes a coping mechanism and an "easy fix" due to its abundance and availability. It is no secret that our increasing weight trend in the United States is linked to increased caloric intake but we are now beginning to understand that the solution goes beyond just finding the right diet plan or protocol.

By turning to other cultures, the French or Japanese for example, we have been learning why their rates of chronic disease are so much lower than ours. Many studies are focused on pinpointing the exact food or nutrient responsible for this cleaner bill of health but this may not be the right approach. Rather than coming from a reductionist perspective, we need to consider their diets and lifestyles as a whole. The Japanese have not abandoned their internal hunger cues and are able to stop eating when they are 80% full (termed "hara hachi bun me" meaning "eat until you are eight parts full"). The French focus on the quality of their food and savor the dining experience; eating without distraction. Oddly enough, when the typical daily diet of a healthy French person was pitted against the US Food Pyramid (or My Plate), it was found that their nutrient intake would be considered far off track and unhealthy (reference). Most notably, their daily saturated fat intake was through the roof by American standards.

Americans spend a lot of their time eating but, ironically, we do not seem to enjoy the eating experience. Unlike the French who thoroughly enjoy their food, we tend to struggle with simply “staying on the wagon” by sticking to our current diet promising the outcomes we desire. We can improve our relationship with food by honoring our internal hunger cues and practicing conscious eating and non-violent communication with our self. In turn, our metabolism will normalize, our cravings will be more biological rather than psychological (external), and we can begin to enjoy food again. Unlike other animals in the kingdom, we have the ability to choose, prepare, and present our meals.

By understanding the biology and physiology that drives hunger, we can create studies that manipulate external factors and test mindfulness-based interventions for promoting positive eating behaviors. Future research on mindfulness-based eating interventions and intuitive eating should include a wide variety of populations (most studies have focused on Caucasian, adult females, and obese individuals), include multiple ethnicities, age ranges, body compositions, and geographic locations. Long term studies would also be beneficial though compliance issues will need to be recognized. Evidence from existing studies on the psychology of eating, food anxieties and relationships, appetite, and mood is promising but more comparative studies evaluating different methods or protocols will be beneficial. Taking an anti-diet approach to correct maladaptive eating behaviors shows promise and may help people re-establish a healthy relationship with food that promotes a healthy weight, naturally. Coming from place of non-violence and empowerment encourages our natural eating intuition.

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