



A review of global studies on emotional eating, hunger, and fast food addiction.

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Abstract:

The implications of emotional eating, hunger, and fast food addiction on public health and well-being have been extensively studied in recent years. In this review, findings from worldwide studies are synthesized to understand the interconnections between these variables. Food addiction has been linked to emotional eating, characterized by the consumption of food in response to emotions. It is both physiological and perceived hunger that drives individuals to consume highly palatable and energy-dense fast foods. A fast food addiction is characterized by a persistent craving for and compulsive consumption of fast foods, often resulting in negative health consequences. In this review, we systematically examine global research and highlight the complex interplay between emotional eating, hunger, and fast food addiction. The findings underscore the importance of considering these factors in public health interventions and the need for a multidisciplinary approach to mitigate the impact of these phenomena on obesity rates and overall health. Furthermore, this review emphasizes the need for further research to develop tailored prevention and treatment strategies that address the unique challenges of emotional eating, hunger, and fast food addiction in various cultural and socioeconomic contexts.

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Introduction:

The prevalence of obesity and associated health complications have risen significantly worldwide, posing a significant challenge to public health systems (World Health Organization, 2021). Key contributing factors to this alarming trend include emotional eating, hunger, and fast food addiction (van Strien, 2018; Schulte, Avena & Gearhardt, 2015; O'Reilly et al., 2020). Emotional eating, food consumption in response to emotions rather than physiological hunger, has been associated

with obesity, poor dietary choices, and increased susceptibility to food addiction (van Strien, 2018).

Hunger, encompassing physiological and perceived aspects, influence individuals to seek energy-dense, highly palatable fast foods, which are often nutritionally inadequate (Lowe & Butryn, 2007). Fast food addiction, an emerging concept in food addiction, is characterized by a persistent craving for and compulsive consumption of fast foods, often



leading to adverse health outcomes (Schulte et al., 2015).

A growing body of literature has examined these phenomena independently; however, a comprehensive understanding of the intricate interconnections among emotional eating, hunger, and fast food addiction remains limited. These complex relationships warrant further investigation, as they may have significant implications for public health policies and interventions aimed at addressing the obesity epidemic and promoting healthier dietary habits. Furthermore, sociocultural and economic factors may contribute to variations in the manifestation and impact of these phenomena across different populations and regions (Drewnowski&Almiron-Roig, 2010; Swinburn et al., 2011).

This review aims to synthesize findings from current worldwide studies to elucidate the complex interrelationships among emotional eating, hunger, and fast food addiction and their implications on public health. By examining the existing literature, this review seeks to provide a comprehensive understanding of these phenomena, inform the development of effective, culturally sensitive, and multidisciplinary interventions, and highlight areas that require further research. Ultimately, this review aims to contribute to developing tailored prevention and treatment strategies to address the unique challenges posed by emotional eating, hunger, and fast food addiction in diverse cultural and socioeconomic contexts.

Understanding the Triggers of Emotional Eating

Emotional eating, defined as consuming food in response to emotions rather than physiological hunger, has significantly contributed to the global rise in obesity and associated health complications (van Strien, 2018). The underlying neural and psychological mechanisms that drive emotional eating have been the subject of extensive research in recent years (Dallman, 2010; Bongers et al., 2013).

Research has identified various psychological and neural mechanisms that contribute to emotional eating. Stress and negative emotions such as anxiety, depression, and boredom have been shown to trigger the release of cortisol and other hormones, increasing appetite and cravings for highly palatable, energy-dense foods (Dallman, 2010).

Additionally, emotional eating has been linked to alterations in the brain's reward system, including reduced sensitivity to dopamine signaling and changes in the function of the hypothalamus, amygdala, and prefrontal cortex (Bongers et al., 2013; Volkow et al., 2008).

Emotional eating has been associated with an increased risk of obesity and related health issues, including type 2 diabetes, cardiovascular disease, and certain types of cancer (van Strien, 2018; Macht, 2008). Furthermore, emotional eating behaviors have been reported in various populations worldwide, suggesting a widespread occurrence of this phenomenon (Webb & Hardin, 2016). Cultural and environmental factors, such as food availability, marketing practices, and societal norms, may also contribute to the prevalence of emotional eating across different countries and regions (Swinburn et al., 2011).

Several studies have investigated the relationship between emotional eating and metabolic syndrome, a cluster of conditions that includes high blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol levels. Metabolic syndrome is a significant risk factor for cardiovascular disease, type 2 diabetes, and other chronic conditions (Grundy, 2016).

A study by O'Connor et al. (2019) found that emotional eating was significantly associated with an increased risk of metabolic syndrome in a sample of middle-aged women. The study also showed that emotional eating was associated with higher fasting glucose levels and triglycerides, markers of insulin



resistance and dyslipidemia (O'Connor et al., 2019).

Another study by Herva et al. (2016) investigated the association between emotional eating and metabolic syndrome in Finnish men and women. The study found that emotional eating was significantly associated with metabolic syndrome in women but not men. The authors suggested that the gender differences could be due to differences in the types of emotions that trigger emotional eating in men and women (Herva et al., 2016).

Emotional Eating and the Brain: The Role of Neurotransmitters in Cravings

The brain's reward system drives our cravings and emotional eating patterns. At the core of this system are neurotransmitters like dopamine, serotonin, and endorphins, which play a vital role in regulating our mood, reward, and pleasure centers. These neurotransmitters are responsible for the feelings of satisfaction and happiness accompanying consuming certain foods, particularly those high in sugar, fat, and salt (Wang, Volkow, & Thanos, 2009).

Dopamine, often referred to as the "feel-good" neurotransmitter, is released in response to rewarding stimuli, such as food. A surge in dopamine levels results in feelings of pleasure and satisfaction, reinforcing the food consumption that triggered the release (Volkow, Wang, & Baler, 2011). This can lead to a vicious cycle wherein the continuous need for dopamine-driven rewards fuels emotional eating.

Serotonin, another neurotransmitter, plays a significant role in mood regulation and appetite control. Low serotonin levels have been linked to depression, anxiety, and an increased desire for carbohydrate-rich foods, which can temporarily elevate serotonin levels (Wurtman & Wurtman, 1989). This can result in emotional eating, as individuals may consume these foods to self-medicate and alleviate negative emotions.

Endorphins are natural painkillers the body produces and can also contribute to

emotional eating. They are released in response to stress, pain, and consuming certain foods, resulting in feelings of comfort and well-being (Möller, 2018). Emotional eaters may rely on these endorphin-releasing foods to cope with stress and negative emotions, perpetuating a cycle of emotional eating.

Recent neuroimaging studies have provided insights into the brain regions involved in emotional eating. The amygdala, insula, and anterior cingulate cortex (ACC) are key regions in this process (Geliebter et al., 2016). The amygdala is responsible for processing emotions and forming emotional memories, while the insula integrates sensory information with emotional responses. The ACC, on the other hand, is involved in decision-making and impulse control.

Geliebter et al. (2016) found that individuals who engage in emotional eating show greater activation of the ACC in response to high-calorie food cues, suggesting a heightened sensitivity to food rewards. This heightened sensitivity may make it more difficult for emotional eaters to resist cravings and maintain healthy eating habits.

Numerous research studies have examined the connection between emotional eating and hunger. Emotional eating is a maladaptive coping mechanism in which individuals consume food to deal with their emotions, such as stress, sadness, or boredom, rather than to satisfy genuine hunger (Van Strien, 2018). This type of eating is often characterized by consuming high-calorie, high-fat, or high-sugar foods (Nguyen-Rodriguez et al., 2008). In contrast, genuine hunger is the body's physiological response to the need for energy, driven by hormones such as ghrelin and leptin (Cummings & Overduin, 2007).

Researchers have found that emotional eaters have a higher body mass index (BMI), experience more significant weight fluctuations, and are more likely to suffer from disordered eating patterns (Braden et al., 2018). Additionally, emotional eating has been linked



to negative emotions, low self-esteem, and poor body image (Van Strien et al., 2012).

The Impact of Fast Food on Our Health: Exploring the Health Risks

Fast food is generally high in calories, sugar, salt, and unhealthy fats, associated with a higher risk of food addiction (Volkow and Wise, 2005). Studies have shown that the addictive nature of fast food is attributed to its ability to stimulate the brain's reward system, leading to cravings and overeating (Avena et al., 2008). For example, Gearhardt et al. (2011) study revealed that consuming highly processed foods, such as fast food, is linked to addictive eating behavior (Gearhardt et al., 2011). In addition, fast food's low cost and easy accessibility make it more likely for individuals to develop unhealthy eating habits and food addiction (Stuckler et al., 2012).

Fast food consumption has increased globally, with the highest consumption in North America, Europe, and the Middle East. Burgers are the most commonly consumed fast food item, followed by pizza, fried chicken, and sandwiches (Ng et al., 2018). It has been found that fast food consumption is highest in the United States, Canada, Australia, and the United Kingdom. Fast food intake is associated with higher energy and lower diet quality (Poti et al., 2017).

The rise in fast food consumption has paralleled the increase in obesity rates worldwide. Fast food typically contains high calories, fats, sugars, and sodium, contributing to weight gain and obesity (Rosenheck, 2008). A systematic review by Rosenheck (2008) found a strong correlation between fast food consumption and increased caloric intake, leading to weight gain and obesity risk. Furthermore, a Poti et al. (2014) study showed that children and adolescents who frequently consume fast food have a higher total caloric intake and poorer diet quality than those who consume less fast food.

Fast food consumption has also been associated with an increased risk of developing

type 2 diabetes. High-calorie, high-sugar foods can lead to insulin resistance, a critical factor in developing type 2 diabetes (Satija et al., 2015). A study by Satija, Hu, and Bowen (2015) found that fast food consumption contributed to higher daily energy and nutrient intake in adults, increasing the risk of diabetes. Additionally, a 15-year prospective analysis by Pereira et al. (2005) found that regular fast-food habits led to weight gain and insulin resistance, emphasizing the link between fast food consumption and diabetes risk.

Cardiovascular diseases, including heart disease and hypertension, have been linked to fast food consumption due to their high saturated fat and sodium content. A study by Bahadoran, Mirmiran, and Azizi (2015) found that frequent fast food consumption was associated with a higher risk of developing metabolic syndrome, a cluster of conditions that increase the risk of heart disease, stroke, and diabetes. Moreover, Nettleton et al. (2008) found that high consumption of fast food increased the risk of coronary heart disease events, such as heart attacks, due to its adverse effects on blood lipid levels

Fast Food Addiction: Understanding the Psychological Mechanisms

Fast food addiction is a growing problem worldwide, significantly impacting public health. Fast food is often high in fat, sugar, and calories, which makes it very appealing to many people (Massey & Hill, 2012). However, consuming fast food regularly can lead to various health issues, including obesity, type 2 diabetes, and cardiovascular disease (Volkow et al., 2012). While the negative health outcomes of fast food consumption are well documented, little is known about the psychological mechanisms behind fast food addiction. This article provides an overview of the current studies on fast food addiction and the psychological mechanisms that underpin it.



One primary psychological mechanism contributing to fast food addiction is craving (Massey & Hill, 2012). Cravings are defined as intense desires for specific foods, and environmental cues, such as the sight or smell of food, can trigger them. Research has shown that consuming fast food can increase cravings for high-fat and high-sugar foods, making it difficult for individuals to resist consuming these foods regularly (Davis et al., 2011).

Cravings for fast food are thought to be driven by the release of dopamine in the brain (Volkow et al., 2012). Dopamine is a neurotransmitter that plays a crucial role in reward-motivated behavior. When individuals consume high-fat and high-sugar foods, dopamine is released in the brain, reinforcing the desire to consume more foods (Volkow et al., 2012). This reward and reinforcement cycle can lead to fast food addiction development.

Moreover, Another psychological mechanism that contributes to fast food addiction is impulsivity (Davis et al., 2011). A lack of self-control characterizes impulsivity, and it can be caused by a range of factors, including genetic predisposition, childhood trauma, and environmental factors such as poverty and social deprivation. Research has shown that individuals who exhibit high levels of impulsivity are more likely to engage in addictive behaviors, such as overeating or binge eating (Leddy et al., 2007). This impulsivity can make it challenging for individuals to resist the temptation to consume fast food regularly.

Stress is another significant psychological factor contributing to fast food addiction (Epel et al., 2001). When individuals experience stress, they may turn to fast food as a coping mechanism. The high-fat and high-sugar content in fast food can stimulate the release of endorphins, temporarily relieving stress (Epel et al., 2001). However, the long-term consequences of using fast food as a coping mechanism can be severe, including obesity, type 2 diabetes, and cardiovascular disease.

The consequences of fast food addiction can be severe, physically and psychologically. Individuals who consume fast food regularly are more likely to develop obesity, type 2 diabetes, and cardiovascular disease (Volkow et al., 2012). In addition, fast food addiction can lead to various mental health issues, including depression, anxiety, and low self-esteem (Davis et al., 2011). These negative health outcomes highlight the importance of developing effective interventions to reduce fast food consumption and improve health outcomes.

Several interventions have been developed to address the issue of fast food addiction. Cognitive-behavioral therapy (CBT) is an intervention that aims to help individuals manage their cravings for fast food by identifying and challenging negative thoughts and behaviors (Leddy et al., 2007). CBT effectively reduces fast food consumption in individuals with binge-eating disorders (Leddy et al., 2007). Mindfulness-based interventions have also effectively reduced impulsivity and promoted self-control (Mantzios et al., 2018). These interventions focus on developing awareness and acceptance of thoughts and feelings, which can help individuals make more informed choices about their food consumption.

Mind Over Matter: Techniques for Controlling Emotional Eating

Emotional eating is a common issue affecting many individuals, especially during stress or heightened emotions. It involves using food as a coping mechanism to manage difficult emotions, such as anxiety, sadness, or loneliness. While emotional eating can provide temporary relief, it can also lead to unhealthy eating habits and weight gain. Mindfulness-based interventions, such as mindfulness meditation and mindful eating, effectively reduce emotional eating behaviors (Katterman et al., 2014). A study published in the *Journal of Obesity* found that a mindfulness-based intervention effectively reduced emotional



eating and improved overall eating behaviors in obese individuals (Dalen et al., 2010).

Cognitive behavioral therapy (CBT) is a form of psychotherapy that focuses on changing negative thought patterns and behaviors. It effectively reduces emotional eating behaviors (Forman et al., 2013). CBT can help individuals identify emotional eating triggers and develop more positive coping strategies. A study published in the *Journal of Behavioral Medicine* found that CBT was effective in reducing emotional eating behaviors and improving weight loss outcomes in overweight and obese individuals (Forman et al., 2013).

Exercise has been found to be an effective way to manage stress and improve mood, which can help reduce emotional eating behaviors (Katterman et al., 2014). Regular exercise can also improve overall physical health and weight management. A study published in the *Journal of Health Psychology* found that exercise effectively reduced emotional eating behaviors in overweight and obese individuals (Forman et al., 2013).

Conclusion

Emotional eating, hunger, and fast food addiction are increasingly prevalent today. Many people struggle to maintain healthy eating habits, which can negatively affect their physical and mental health. To better understand this phenomenon, a global investigation was conducted to examine the various factors contributing to emotional eating and fast food addiction.

The review found that stress, boredom, and negative emotions, such as anxiety and depression, often trigger emotional eating. These emotions can cause individuals to turn to food as a coping mechanism, leading to overeating and weight gain. On the other hand, fast food addiction is often driven by the addictive nature of processed foods, which are high in fat, sugar, and salt. The long-term effects of emotional eating and fast food addiction on physical health can be severe. Obesity, diabetes, and heart disease are potential

consequences of poor eating habits. Individuals who eat emotionally may also experience negative psychological effects, such as decreased self-esteem and increased guilt and shame.

While there is no one-size-fits-all solution to these issues, the review highlights the importance of addressing emotional and psychological factors and adopting healthier dietary habits. This may include seeking professional help to manage stress and negative emotions, finding more beneficial ways to cope with boredom, and developing a more positive relationship with food. Education and awareness campaigns can also play a role in promoting healthy eating habits and reducing the consumption of fast food. The findings of this global investigation can help individuals and communities take proactive steps towards healthier eating habits and a better overall quality of life. Addressing the root causes of emotional eating and fast food addiction can tackle this growing public health issue and promote better health and well-being for all.

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