



ISSN (E): 2277-7695

ISSN (P): 2349-8242

TPI 2024; 13(5): 04-08

© 2024 TPI

www.thepharmajournal.com

Received: 12-02-2024

Accepted: 16-03-2024

Juliana Maina

Department of Food Science and
Technology, Murang'a
University of Technology,
Kenya

The role of emotions in food choice: How mood, stress and nostalgia can influence what we find appealing

Juliana Maina

Abstract

Nutrition possesses a significant impact on the incidence of chronic disease, with unhealthy diets being associated with a higher risk for obesity and overweight, cancer, and cardiovascular disease. Dietary mannerisms are associated with many determinants. Nonetheless, other aspects, particularly emotional wellbeing of consumers, have been established to play a vital role in influencing individuals' food choices. This paper explores how emotional elements of mood, stress, and nostalgia influence individuals' choices of food. In general, negative or low mood bears a robust association with the consumption of unhealthy foods such as sugary and energy dense food choices. High levels of stress motivate consumers to avoid the consumption of healthy foods such as fruits and vegetables, and instead focus on eating more unhealthy foods such as fast foods, soft drinks, and other sugary foods. Nostalgia influences food choices in terms of decreasing people's focus on unhealthy foods and increasing the eating of healthy foods.

Keywords: Emotions, food choices, mood, nostalgia, stress, food preferences

Introduction

Nutrition possesses a significant impact on the incidence of chronic disease, with unhealthy diets being associated with a higher risk for obesity and overweight, cancer, and cardiovascular disease. Diets typified by high sugar, salt, and fat consumption and low vegetables and fruit consumption can result in these adverse health outcomes (Robert *et al.*, 2022) ^[15]. Dietary mannerisms are associated with many determinants. Acceptance has been the primary measure employed in comprehending food choice behavior and preference (Gutjar *et al.*, 2015) ^[6]. Products associated with higher liking ratings are preferred more often relative to commodities with lower liking ratings. Nonetheless, other aspects, particularly emotional wellbeing of consumers, have been established to play a vital role in influencing individuals' food choices (Brückner *et al.*, 2023; Do *et al.*, 2024; Gutjar *et al.*, 2015) ^[1, 2, 6]. As such, emotions are increasingly becoming a critical aspect in designing products that fulfill consumers' expectations and needs (Prinyawiwatkul, 2020) ^[14]. Emotional wellbeing is a multidimensional aspect that define the general feeling of an individual as well as a person's feeling regarding life overall (Brückner *et al.*, 2023) ^[11]. Positive emotional wellbeing is associated with health choices of food (Robert *et al.*, 2022) ^[15]. On the other hand, negative emotional wellbeing increases the risk of impulsive behavior, which in turn result in unhealthy or poor food choices (Do *et al.*, 2024) ^[2]. Emotional profiles are effective in differentiating products with similar hedonic ratings and sensory characteristics. These profiles may provide extra information that transcends the boundaries of conventional hedonic ratings and offer additional insight towards consumers' food choices (Prinyawiwatkul, 2020) ^[14]. Mood, stress, and nostalgia are among the primary emotional responses that greatly influence individuals' choices of food.

Mood and Food Choices: Mood denotes the valence associated with emotion, whether negative or positive, and the degree and intensity of arousal (Gillison *et al.*, 2022) ^[4]. The effect of the relationship between food choices and mood is bidirectional in that mood influences food choice, and food choice influences mood. For instance, the eating more processed carbohydrates can affect an individual's mood by increasing the risk of anxiety and depression through rapid and repeated decreases and increases in blood glucose (Firth *et al.*, 2020) ^[3].

Corresponding Author:**Juliana Maina**

Department of Food Science and
Technology, Murang'a
University of Technology,
Kenya

Mood influences the food consumed by individuals in that experiencing stress over specific events of life may lead to out-of-control eating through eating less frequently or overeating. The effect of mood on food choice may be a conscious goal or occur at a very immediate level, thereby influencing individuals' food choice without their knowledge (Gillison *et al.*, 2022)^[4]. Negative states of mood such as high stress levels are linked to poor eating mannerisms and food choices (Gillison *et al.*, 2022)^[4]. On the other hand, positive states of mood are related to better quality of diet as well as greater self-control capacity. More energy dense choices of food are attributed to negative mood and anticipations of the mood being altered after the food (Gillison *et al.*, 2022)^[4].

Leeds *et al.* (2020)^[11] established that low or negative mood leads to the consumption of unhealthy food, overeating, and addiction to some foods. On the other hand, improved or positive mood is associated with more healthy food consumption (Leeds *et al.*, 2020)^[11]. As such, these findings reveal that individuals have the ability to exert self-regulation and self-control and act in line with intents when having positive feelings or mood including positive self-perceptions and wellbeing (Zorbas *et al.*, 2018)^[22]. Positive emotions are always associated with high levels of appetite for familiar foods since happy individuals focus on certain foods to reward or celebrate themselves. Positive mood coupled by robust emotional arousal can increase the tendency of individuals to consume indulgent foods like buttered, salted popcorn and chocolate. Foods consumed in these situations are known as comfort foods, as they offer immediate gratification and psycho-physical benefits. For instance, eating foods associated with high sugar and fat levels trigger the production of endorphins and insulin, and intragastric infusion of fatty acid solution influences the activity of the brain in many regions in individuals with sadness (Guo *et al.*, 2021)^[5].

Stress and Food Choices

High stress levels greatly increase the risk of a range of health conditions and diseases such as hypertension, cardiovascular disease, accelerated rates of illness progression, impaired immune function, obesity, and stroke. The detrimental effects of stress on health occur through indirect behavioral and direct biological changes. Indirect behavior changes are experienced when stress influences non-habitual and habitual health behaviors, whereas the direct biological changes transpire when stress influenced autonomic and neuroendocrine processes (O'Connor *et al.*, 2021)^[13]. These pathways have a likelihood of operating in a bidirectional manner, with changes in mannerism affecting biology, and biological changes influencing changes in behavior, thereby affecting health.

Food choices is among the behavioral changes attributed to stress that bear significant impact on health. The purpose of food intake transcends the need to ensure the functionality of the body (Lederer & Huber, 2022)^[9]. Nutritional components of food become a vital part of the human body, interacting with the humans' immune system, metabolism, and microbiota (Lederer & Huber, 2022)^[9]. As such, the food that individuals consume determine their overall wellbeing in that choosing unhealthy diet leads to poor health, while consuming healthy diets improved the human health (Lederer & Huber, 2022)^[9]. Stress is associated with a causal effect on various economic decisions and behaviors, including

temporary altering of risk attitudes and time preferences, thereby impacting individuals' capabilities when it comes the maximization of decisions (Vitt *et al.*, 2021)^[17].

Stress leads to more habitual mannerism including the purchase and consumption of well-known foods and more impulsive choices. Impulsive and habitual food choices have a likelihood of being less health relative to food choices embraced following thorough consideration (Vitt *et al.*, 2021)^[17]. Stress is categorized as chronic or acute based on its duration. Daily stressors are examples of acute stress. Daily stressors require immediate attention and hence shift physical and cognitive resources to address the stressor. Chronic stress is characterized by a consistent emotion of being overwhelmed and pressured over a long period. Short-term stress affects desire to eat health and the food choices preferred by individuals. Hormonal reactions to a stressor cause longing for energy-dense "comfort diets", particularly high-calorie snacking, thereby leading to a temporary alteration in food preferences. The consumption of highly tasty diets triggers the system of food reward and the pleasurable feeling increases the probability of repeat eating, thereby resulting in obesity and overweight (Yang *et al.*, 2022)^[20]. Therefore, stress continues to be a significant public challenge owing to its association with undesirable eating mannerism (Yang *et al.*, 2022)^[20].

Whereas stress affects patterns of food selection, this effect varies by sex and country. For instance, the findings of the study executed by Mohamed *et al.* (2020)^[21] in Saudi Arabia reveal that approximately 50% of the participants registered experiencing some stress levels, with 64.5% of the participants being females and 54% being males. The outcomes of the univariate analysis showed indicated that, when experiencing stress, 68% of the participants who constituted females, reported consuming more than usual relative to the 49% participants who were males (Mohamed *et al.*, 2020)^[12]. More females than males also reported less consumption of food when stressed (Mohamed *et al.*, 2020)^[12]. The outcomes of the McNemar test showed that stress influenced participants to focus on more consumption of salty flavors. This influence was independent of the participants' sex (Mohamed *et al.*, 2020)^[12]. However, more females (82 percent) than males (64.5 percent) registered a preference for sweet foods under stress (Mohamed *et al.*, 2020)^[12]. On the other hand, male participants preferred savory and bitter flavors. In addition, females reported a preference for homemade food when stressed, while males opted for takeout foods (Mohamed *et al.*, 2020)^[12]. More females (68 percent) admitted a loss of control and indulgence in overeating when stressed relative to males (49%) (Mohamed *et al.*, 2020)^[12]. The results of the logistic regression revealed that female participants associated perceived stress with frequent eating of snacks, sweets, beverages, and cookies or cake, and limited frequent consumption of vegetables and fruits (Mohamed *et al.*, 2020)^[12]. When it came to male participants, the eating of meat and fast food significantly and positively related to perceived stress (Mohamed *et al.*, 2020)^[12]. From these findings it can be noted that perceive stress results in unhealthy changes in the patterns of eating in both males and females, as exemplified by reports of a rise in the consumption of cookies or cake, snacks, and sweets among females and high consumption of meat and fast foods among males.

Yang *et al.* (2022)^[20] explored the relationship between food

preferences and perceived stress levels among Chinese adults. The results showed that whereas perceived stress levels negatively related to a perceived preference for vegetables and fruits, it is positively associated with a liking for sugary foods and soft drinks as well as fast foods. However, contrary to the findings of Mohammed *et al.* (2020) [12], Yang *et al.* (2022) [20] did not establish any relationship between a perceived stress levels and a liking for salty snacks for both women and men. In their characterization of eating mannerisms, food pleasure profiles, and appetite of individuals with chronic stress, Hyldelund *et al.* (2022) [7] established that most participants derived pleasure from the sensory modalities associated with food and the comforting aspects associated with food pleasure. Moreover, the moderately stressed participants exhibited fewer main meals, but more night meals and post-dinner snacks relative to their eating condition before stress. On the other hand, the highly stress participants reported symptoms of anhedonic features and loss of appetite. Shen *et al.* (2020) [16] also established a strong association between higher perceived stress and greater tendency to engage in emotional eating, which in turn leads to mood-based food choice.

Nostalgia and Food Choices

Nostalgia refers to an inclination toward the past (Wang *et al.*, 2020) [18]. Individuals' view of themselves, as well as their surrounding world, and relationships is influenced by various transient cognitive processes (Wang *et al.*, 2020) [18]. This social emotion is characterized by individuals often recalling nostalgic episodes with their close acquaintances including family members, romantic partners, or friends, usually within the context of momentous occasions such as anniversaries, family reunions, or weddings (Wang *et al.*, 2020) [18]. Nostalgia can be conceptualized as individualistic and collectivist notions. Wang *et al.* (2020) [18] define the individualistic notion of nostalgia as a sentimental longing for an individual's past. Collective nostalgia entails a bittersweet or sentimental longing for the past that represents a generation, a nation, or a culture (Wang *et al.*, 2020) [18]. This collectivist notion ensures the consistency of emotion between individuals of like backgrounds when presented within the same context (Wang *et al.*, 2020) [18]. These two notions of nostalgia impact individuals' choices of food in different ways. As an aspect of emotions, nostalgia serves as a psychological resource that presents various interpersonal and intrapersonal benefits including boosting self-positivity or self-esteem, increasing meaning in life, fostering social support and social connectedness, encouraging help-seeking, enhancing psychological wellbeing and health, and attenuating dysphoric states like death anxiety, stress, boredom, and loneliness (Yang *et al.* 2022) [20].

Wang *et al.* (2020) [18] investigated the impact of nostalgia on green consumption. The outcomes showed that high-nostalgia consumers possess lower liking for green products relative to low-nostalgia consumers (Wang *et al.*, 2020) [18]. This impact is mediated by previous orientation in that high-nostalgia consumers have a tendency to dwell on their past, which in turn triggers preference for older products as opposed to green ones associated with future connotations. Furthermore, mortality salience (MS) plays a significant role in moderating the effect of nostalgia on individuals' preference for green products in that high MS enhances the negative impact of nostalgia on the liking for green products (Wang *et al.*, 2020)

[18].

Nostalgic labels inspire food consumption. Beverages and foods are always advertised with nostalgic appeals. Examples of such food products are hot drinks, cereals, and candy. Moreover, appeal to nostalgia is evident in the revitalization of packaging from past including vintage packaging. Marketers of food products harness nostalgia by renewing packages, promotions, and products associated with past experiences or the past. Nostalgia is leveraged to persuade buyers that products possess higher value owing to their connection to a positive, idealized past.

Individuals exhibit the tendency of categorizing foods as unhealthy and healthy (Lasaleta *et al.*, 2021) [8]. Even though healthy foods have less instant pleasure relative to unhealthy foods, they possess long-term benefits (Lasaleta *et al.*, 2021) [8]. Unhealthy foods are considered rewarding and pleasurable in the short-term. This form of indulgent consumption is associated with low self-control (Lasaleta *et al.*, 2021) [8]. Indulgent food consumption and nostalgia have been established to possess a robust relationship (Wang *et al.*, 2018) [19]. Nonetheless, social connectedness mediates this association in that high nostalgia functions via high social connectedness to raise the preference of consumers for indulgent foods (Wang *et al.*, 2018) [19]. On the other hand, low nostalgia operates through low social connectedness to reduce consumers' liking for indulgent foods (Wang *et al.*, 2018) [19]. Moreover, eating companions play a vital role in moderating the effect of nostalgia on individuals' preference for indulgent food. For instance, in situations where individuals are eating with friends, the impact of nostalgia on their preference for indulgent foods is strengthened (Wang *et al.*, 2018) [19]. Nonetheless, this effect is weakened in circumstances where consumers are eating alone or with strangers (Wang *et al.*, 2018) [19].

Contrary to the findings of Wang *et al.* (2018), more recent research indicate that nostalgia positively influences individuals to focus on the consumption of healthy foods. For instance, Lasaleta *et al.* (2021) [8] established that individuals not only consume more, but also report more favorable feelings about healthy foods when they are nostalgic. Nostalgia was also associated with reduced eating of unhealthy foods (Lasaleta *et al.*, 2021) [8]. Nostalgia's differential impact on the consumption of unhealthy and healthy foods is attributed to enhanced social support perceptions (Lasaleta *et al.*, 2021) [8]. Since social support perceptions enhance self-control resources, nostalgic individuals exhibit a more enhanced ability to make healthier food selections (Lasaleta *et al.*, 2021) [8]. Nostalgia-triggered social support perceptions propel self-control resources, which permits individuals to resist urges for short-term pleasurable unhealthy foods, and instead focus on more healthy food options with long-term rewards. As such, perceived social support serves as a vital mechanism underlying the positive influences of nostalgia on healthy eating behavior and attitudes.

Nevertheless, it is significant to note that specific foods items, which are intrinsically nostalgic, exhibit differences across cultures. For example, tofu dish is intrinsically nostalgic within the Chinese context, but does not trigger nostalgic feelings within the context of USA. As such, the employment of nostalgic aspects in foods and food packaging requires careful selection of such products and product packaging to ascertain their intrinsically nostalgic appeals within the culture of focus.

Conclusion

Emotional responses of individuals play a vital role when it comes to making food decisions. There exists a robust link between food choice and emotions, particularly the emotional aspects of stress, nostalgia, and mood. Perceived stress levels and self-reported preferences have a robust association. High levels of stress motivate consumers to avoid the consumption of healthy foods such as fruits and vegetables, and instead focus on eating more unhealthy foods such as fast foods, soft drinks, and other sugary foods. Nostalgia influences food choices in terms of decreasing people's focus on unhealthy foods and increasing the eating of healthy foods. Nonetheless, enhanced perceptions of social support play a significant role in inspiring nostalgic individuals to embrace health foods. As in the case of stress and nostalgia, individuals' mood also influences food choices and food intake. Negative or low mood bears a robust association with the consumption of unhealthy foods such as sugary and energy dense food choices.

Recommendations

Further research is required to provide clarity on the relationship between stress and preference for salty snacks in men and women. Research findings in this area, particularly the studies of Mohammed *et al.* (2020) ^[12] and Yang *et al.* (2022) ^[20] seem to provide conflicting results in this area. Further research is also needed to establish how the aspect of nostalgia can be incorporated in various foods to evoke nostalgic feelings that motivate individuals or consumers to focus on the consumption of health foods. Lastly, there is a need for more awareness creation through intensive campaigns designed to caution consumers on the health risks associated with the consumption of comfort foods as remedies for stressful situations.

References

- Brückner K, Emberger-Klein A, Menrad K. The role of emotions in food-related decision-making: A choice-based conjoint analysis of yogurt preferences. *Journal of Food Products Marketing*. 2023;29(6):177-196. DOI:10.1080/10454446.2023.2227575
- Do S, Didelez V, Börnhorst C, Coumans JM, Reisch LA, Danner UN, *et al.* The role of psychosocial well-being and emotion-driven impulsiveness in food choices of European adolescents. *International Journal of Behavioral Nutrition and Physical Activity*. 2024;21(1):1. doi:10.1186/s12966-023-01551-w
- Firth J, Gangwisch JE, Borsini A, Wootton RE, Mayer EA. Food and mood: how do diet and nutrition affect mental wellbeing? *BMJ*; c2020. p. 369. doi: <https://doi.org/10.1136/bmj.m2382>
- Gillison F, Verplanken B, Barnett J, Griffin T, Beasley L. A rapid evidence review of the Psychology of Food Choice. Food Standards Agency; London, UK; c2022.
- Guo Y, Zhu X, Zeng M, Qi L, Tang X, Wang D, *et al.* A diet high in sugar and fat influences neurotransmitter metabolism and then affects brain function by altering the gut microbiota. *Translational psychiatry*. 2021;11(1):328. doi:10.1038/s41398-021-01443-2
- Gutjar S, de Graaf C, Kooijman V, de Wijk RA, Nys A, Ter Horst GJ, *et al.* The role of emotions in food choice and liking. *Food Research International*. 2015;76:216-223. <https://doi.org/10.1016/j.foodres.2014.12.022>
- Hyldelund NB, Frederiksen C, Byrne DV, Andersen BV. Is stress taking the pleasure out of food?—A characterization of the food pleasure profiles, appetite, and eating behaviors of people with chronic stress. *Foods*. 2022;11(13):1980. <https://doi.org/10.3390/foods11131980>
- Lasaleta JD, Werle CO, Yamim AP. Nostalgia makes people eat healthier. *Appetite*. 2021;162:105187. DOI:10.1016/j.appet.2021.105187
- Lederer AK, Huber R. The relation of diet and health: You are what you eat. *International Journal of Environmental Research and Public Health*. 2022;19(13):7774. doi:10.3390/ijerph19137774
- Lee MF, Angus D, Walsh H, Sargeant S. Maybe it's Not Just the Food? A Food and Mood Focus Group Study. *International Journal of Environmental Research and Public Health*. 2023;20(3):2011. doi:10.3390/ijerph20032011
- Leeds J, Keith R, Woloshynowych M. Food and Mood: Exploring the determinants of food choices and the effects of food consumption on mood among women in Inner London. *World Nutrition*. 2020;11(1):68-96. DOI: <https://doi.org/10.26596/wn.202011168-96>
- Mohamed BA, Mahfouz MS, Badr MF. Food selection under stress among undergraduate students in Riyadh, Saudi Arabia. *Psychology research and behavior management*; c2020. p. 211-221. DOI: 10.2147/PRBM.S236953
- O'Connor DB, Thayer JT, Vedhara K. Stress and health: A review of psychobiological processes. *Annual Review of Psychology*. 2021;72(1):663–688. <https://doi.org/https://doi.org/10.1146/annurev-ps.01.01.01.01.01>
- Prinyawiwatkul W. Relationships between emotion, acceptance, food choice, and consumption: Some new perspectives. *Foods*. 2020;9(11):1573. DOI:10.3390/foods9111573
- Robert M, Shankland R, Bellicha A, Kesse-Guyot E, Deschasaux-Tanguy M, Andreeva VA, *et al.* Associations between resilience and food intake are mediated by emotional eating in the NutriNet-Santé Study. *The Journal of Nutrition*. 2022;152(8):1907-1915. Doi:10.1093/jn/nxac124
- Shen W, Long LM, Shih CH, Ludy MJ. A humanities-based explanation for the effects of emotional eating and perceived stress on food choice motives during the COVID-19 pandemic. *Nutrients*. 2020;12(9):2712. <https://doi.org/10.3390/nu12092712>
- Vitt N, James J, Belot M, Vecchi M. Daily stressors and food choices: A lab experiment with low-SES mothers. *European Economic Review*. 2021;136:103754. <https://doi.org/10.1016/j.euroecorev.2021.103754>
- Wang X, Chao CH. Nostalgia decreases green consumption: The mediating role of past orientation. *BRQ Business Research Quarterly*. 2020;23(4):270-284. Doi:10.1177/2340944420966867
- Wang X, Keh HT, Chao CH. Nostalgia and consumer preference for indulgent foods: The role of social connectedness. *International journal of consumer studies*. 2018;42(3):316-326. Doi:10.1111/ijcs.12419
- Yang Z, Wildschut T, Izuma K, Gu R, Luo YL, Cai H, *et al.* Patterns of brain activity associated with nostalgia: a social-cognitive neuroscience perspective. *Social Cognitive and Affective Neuroscience*.

- 2022;17(12):1131-1144. Doi: 10.1093/scan/nsac036
21. Yang F, Cao B, Gao X. Association between perceived levels of stress and self-reported food preferences among males and females: a stated preference approach based on the china health and nutrition survey. *Frontiers in Public Health*. 2022;10:850411. Doi:10.3389/fpubh.2022.850411
22. Zorbas C, Palermo C, Chung A, Iguacel I, Peeters A, Bennett R, *et al*. Factors perceived to influence healthy eating: a systematic review and meta-ethnographic synthesis of the literature. *Nutrition reviews*. 2018;76(12):861-874. <https://doi.org/10.1093/nutrit/nuy043>