

Review

Exploring the Impact of COVID-19 Pandemic on Food Choice Motives: A Systematic Review

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Abstract: The economic crisis caused by the COVID-19 pandemic has effected the global economy, with the main changes expected to affect human life in the future, including food consumption. However, could this pandemic be assumed as a threshold for the suspension of the usual rules behind food choices? This review highlights the changes in food choice motivations before, during, and after the pandemic that have been reported in the literature to date to answer the research question on the changes in food choice motives caused by the pandemic to consumers worldwide. The review comes up with ten key food motives important for consumers, namely health, convenience, sensory appeal, nutritional quality, moral concerns, weight control, mood and anxiety, familiarity, price, and shopping frequency behavior; these motives continue to be significant in the post-pandemic era. Our findings indicate that it is too premature to give definite answers as to what food choice motives in the post-COVID-19 era will be like. Consumers' perceptions and attitudes toward food in the new era are contradictory, depending on the country of the study, the average age, and the sex of the study group. These controversial results illustrate that, for food consumption, motives depend on the population being searched, with changes identified occurring in two directions. The definite answers will be given in three to five years when the new conditions will be clear and a number of studies will have been published. Even though it is too early to fully understand the definite food choice motive changes, defining a "new" index of consumer satisfaction is necessary since it can alter the food sale strategies of retail managers, food companies, and the other parties involved in the agri-food chain.

Keywords: food consumption; food choice motives (FCM); convenience; health; sensory appeal; nutritional quality; ethical concern; weight control; mood and stress; familiarity; price



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1. Introduction

The COVID-19 crisis forced a significant percentage of the world's population to suddenly confine themselves at home, with limited social contacts, exposure to repeated information on the numbers of infections and deaths, and changes in daily habits and emotional well-being [1]. Daily routines were disrupted by isolation and remote works [2], with decreased physical activity level [3] and increased sedentary behavior [4,5], as well as increased meal and snacking frequency [5]. Consumers are informed about the new situation and choose their food based on the main food choice motives (FCM) of health, convenience, sensory appeal, nutritional quality, moral concerns, weight control, mood and anxiety, familiarity, price, and shopping frequency. FCM are critical parameters for consumers to choose food which include social, cultural, aesthetic, political, and contextual factors, as well as food values [6].

According to Salari et al. [7], a better health status will bring variations in food consumption. The impact of the pandemic on mood, mental health, and emotional well-being can also affect food intake and choices. Aoun et al. [8] reported that unbalanced eating behaviors are frequent in people with emotional disorders, depression, and/or anxiety. Contradictory results are recorded in terms of the influence of the pandemic on diet, with some studies reporting a positive influence while other studies reporting a negative

influence or no influence. A study in France revealed improvement in diet quality in some cases, while in others, diet quality worsened or there was no change [9]. A Canadian study indicated a slight improvement in diet quality during the early lockdown [10]. In contrast, a Saudi Arabian cross-sectional study with adults showed that food quality deteriorated during the pandemic [11]. The scoping review by Bennett et al. on the pandemic's impact on food quality also showed the contradiction of the results recorded [5]. A limitation of these studies is that a change in diet quality is a result of a change in FCM, and this latter is not elucidated widely. This concept is crucial since it provides a basis to influence diet quality efficiently and in a long-lasting manner. Furthermore, people consider food not only as a means to meet caloric intake and body needs, but also as a means of satisfaction (e.g., appearance, lifestyle, image, and health). Given the controversy in diet behaviors and associated body weight changes caused by the pandemic, there is a need to better understand the motives for specific food choices and their changes as result of the COVID-19 pandemic restrictions. COVID-19-related motivations for consumer food choice can be interpreted into informational codes and advertising campaigns by actors and food chain participants to reach more consumers and vulnerable groups [12,13].

Reports on the motives for food during the pandemic and beyond are still rare, while FCM are addressed only partially and not thoroughly enough. However, more and more papers from different countries are published on the subject on a monthly basis, indicating an increased interest in FCM on the global market. In this paper, we review the reported data exploring changes in FCM caused by the pandemic. So far, there appears to be a significant increase in online shopping, an increase in prices, and a more conservative household management toward buying quality foods. In contrast, familiarity, convenience, and sensory appeal are not significantly affected by the pandemic.

2. Methodology and Literature Search

This review followed the guidelines for systematic reviews and meta-analysis extension for scoping reviews (*PRISMA-ScR*) and was in line with the *JBIM Manual for Evidence Synthesis*, which is based on the first methodological guide for such reviews reported by Arksey and O'Malley, who noticed and responded to the early appearance in the literature noting similarities and the lack of uniformity [14]. This review also followed the improved methodologies sometimes referred to as "mapping review" or "scoping study" [15–18] and the latest update [19].

A search of PubMed, Google Scholar, and Science Direct was performed for studies published in 2020, 2021, and 2022 and studies that were published before this period using pre-defined terminology. The search terms (COVID-19) and (Food Choice Motives) and (lockdown); (Food Habits) and (Lockdown); (Dietary change) and (COVID-19) and (lockdown); and (COVID-19) and (nutrition or diet) were used initially in the three databases to obtain an understanding of the current research on this topic area. Following this, an alternative phrasing search in relevant publications and a guidance on the search strategy were finalized. The search terms were then finalized with the 10 search terms (research themes) used in this systematic review. This search took place in September and October of 2022. No restrictions and filters were used to avoid excluding any papers of interest. The results were evaluated for eligibility based on the title, abstract, and full text. Two researchers independently screened the articles for eligibility (DS and ZCK) following these inclusion criteria:

- Limitation to papers published in the years 2020, 2021, 2022 (including prior papers for the definition of terminologies).
- Studies investigating the connection of the pandemic and FCM.
- Studies in English only.

The search was broad to identify all studies fitting the review's aim. No authors were contacted for further information.

The limitations of the review process included the following factors:

- Only full-text publications in English were considered, which might have led to selection bias.
- As with most nutritional research studies, dietary intake was assessed through self-reported data, where misreporting, or underreporting, was possible
- The majority of studies were cross-sectional in design and, therefore, the risk of bias and the quality of each study were difficult to assess due to nature of this review and the included studies.
- It was impossible to evaluate quality compared to longer-term cohort/cause–effect research.

3. Results

After reviewing all eligible papers and exploring changes in FCM caused by the pandemic, ten research themes were extracted from each publication for evaluation (Table 1). These included health, convenience, sensory appeal, nutritional quality, moral concerns, weight control, mood and anxiety, familiarity, price, and shopping frequency behavior.

3.1. Food Consumption and Health

Food consumption and consumer health have always been one of the main issues that all countries have to address in the new post-COVID-19 era [20]. In recent decades, trends in food consumption have been linked to an increase in chronic food-related diseases, such as obesity, cancer, and coronary heart disease [21]. Experts have focused on promoting medical rules about nutrient intake and proper consumption, while avoiding targeting foods. They, thus, issued guidelines for a balanced diet that does not exclude the consumption of specific food products [22]. Consumption of foods high in fat, sugar, and sodium, and low in fiber, are considered to be risk factors for hypertension, cardiovascular disease, diabetes, breast cancer, colon cancer, rectal cancer, prostate cancer, and obesity [23].

Studies that occurred during the pandemic have shown that energy intake exceeding energy expenditure is a major risk factor for a wide range of medical conditions, ranging from diabetes and cancer to musculoskeletal disorders [24,25]. Health attitudes have changed during the COVID-19 era. Due to long periods of limited mobility, consumers were more prone to unhealthy lifestyles, such as reduced or no physical activity and excessive sedentary behavior, which had negative effects on eating habits as well as on body composition [25,26].

The post-COVID-19 era seems to have altered the lives of people, leading to significant changes in various health behaviors. In particular, according to Drieskens et al. [27], increased consumption of sweet or salty snacks and less physical activity have led to an increase in body weight during pandemic-related confinement among adults in Belgium, and more measures are needed to support individuals to achieve healthier behaviors to tackle overweight and obesity. Furthermore, Martínez-de-Quel et al. [28] showed that pandemic-related confinement caused a drawback on the levels of physical activity and sleeping on Spanish citizens, while body weight and self-perceived well-being were also adversely affected, indicating that those with an active life were more susceptible to such disruptions. Robinson et al. [29] reported perceived negative changes in weight-related eating behaviors and physical activity and perceived negative changes in the barriers that adults living in the UK faced in the management of their weight (e.g., motivation problems and control around eating), compared to pre-lockdown. A study on the effect of quarantine on the diet and exercise of Lithuanians and the association between health behaviors and changes in body weight by Kriaucioniene et al. [30] showed a decrease in the consumption of carbonated or sugary drinks, fast foods, and sweets and an increase in the consumption of homemade sweets and fried foods. This was combined with a decrease in physical activity, resulting in an increase in body weight. Huber et al. [31] in a cross-sectional study from Bavarian universities showed that an increase in food consumption, mainly bread and sweets, combined with a lower level of physical activity led to a reduction in weight maintenance during the pandemic. Poelman et al. [32] analyzed consumer behavior in

the Netherlands where they demonstrated that consumers kept their eating behavior or food purchases during COVID-19 lockdown, thus keeping their eating habits; however, in people with overweight and obesity, the lockdown had a negative effect on healthy food choices. A Polish study showed that health and weight control were more important during the pandemic compared to the period before it [33].

Although the short-term effects of lockdown practices differ between countries, women seem to be most affected [34]. Jaeger et al. [35], in a propositions to relevant authorities, proposed the need for educational programs to increase physical activity and to teach basic principles of healthy eating and the construction of a healthy food “plate” in case of a possible future lockdown.

Proposition 1. *The present data on health motives indicate that consumers decreased physical activity during the COVID-19 pandemic, with parallel increase in consumption of unhealthy foods which had negative effects on their health. A minority of consumers, though, preferred to choose homemade cooked meals for better results.*

3.2. Food Consumption and Convenience

The term ‘convenience’ is associated with ‘convenience foods’—that is, those foods prepared and made available to shoppers designed for easy and quick consumption. Such foods include frozen or chilled foods, ready meals, confectionery, snacks and beverages, processed meat and cheese, canned products, and ready-to-eat foods for sale [36]. The convenience factor has always influenced the choice of food, with the result that the consumption of ready-made food is the outcome of the strategy followed by households to cope with time pressure [37]. However, Botonaki et al. [38] in their study on whether or not to choose a ready meal, which included spouse’s work status and socio-demographic characteristics of consumers as the control variables, showed that the convenience of cooked meals may be negatively assessed as their consumption is connected with emotions of guilt, regret, and neglect.

Since the beginning of the pandemic, lifestyle and eating habits have been greatly affected [39]. An increase in the use of convenience foods, such as instant and frozen foods, has been recorded worldwide [40]. According to the study by Ko et al. [41], there was a significant decrease in visits to markets, fast food restaurants, catering restaurants, buffet restaurants, and snack bars, while food deliveries and home-cooked meals increased significantly during the pandemic period. The study by Marty et al. showed that the importance of convenience, familiarity, and price decreased during the pandemic [13]. Liu and Chen reported that the young Chinese have normalized takeaway food consumption and developed their own ways of reducing food/food-related waste, which reflect young people’s lifestyles [36].

Proposition 2. *The present data clearly indicate an increase in the purchase of takeaway food and ready-to-go meals during the pandemic to avoid visits to supermarket or elsewhere.*

3.3. Food Consumption and Sensory Appeal

Sensory appeal is the taste, smell, texture, and appearance of food [42]. It is crucial in directing consumers’ selection for various foods. Groups of consumers, such as consumers attaching high importance to all determinants (“demanding consumers” with high significance for all determinants), consumers attaching low importance to all determinants (“indifferent consumers” with low significance for all determinants), “healthy eaters” (health as the most important determinant of food choices), and “hedonists” (convenience, sensory appeal, and price as the most important determinants) experienced specific changes in their food consumption during COVID-19 [43]. Moreover, the “healthy eaters” were identified as those who preferred mostly vegetables; the “hedonists” showed a preference for meat/fish, dairy, and snacks; the “demanding consumers” showed a preference for

all food categories; and the “indifferent consumers” showed a low preference for all food categories [44]. Sensory appeal seemed to be unaffected by “coronavirus pandemic” of rural China households [45]. Mood and sensory appeal became less important in Polish citizens [33] and Croatian males [46], but more important in French [13] and British people (except sensory appeal which was unchanged) [47].

Proposition 3. *The present data show that sensory appeal motives have not been a priority for consumers during COVID-19 and beyond; therefore, their preferences have not significantly changed for this motive.*

3.4. Food Consumption and Nutritional Quality

The health effect of food prevention is undeniable. The combination of food and drink in a concentrated period, combining taste and consumption, is called a meal. Analyzing meals and identifying what foods and drinks are consumed allows nutritionists to understand how different combinations of foods and drinks, throughout the day, affect overall diet quality and health [48]. The nutrients in foods combined with their effects can be interactive because, when consuming foods, humans primarily select to mix foods in meals or snacks according to their own formulations. Dietary advice and other nutritional recommendations are given on a daily basis to consumers so that they can understand and follow them [49]. However, the quality, food safety, and nutritional value of foods vary widely around the world. Serious constraints on global production include contamination of the food chain and water by persistent pesticide residues, and reduction in nutrient content and flavors due to intensive production and/or low-cost food processing [50].

During the pandemic, consumers chose healthy, safe, and better quality food compared to their previous practices [51]. However, in some countries, such as Greece [52] and UK [29], studies showed a consumer preference for unhealthy products, such as snacks and pre-packaged ‘over-processed’ foods high in fats, sugars, and salt. Ruiz-Roso et al. [53] reported a diversification in dietary habits and altered consumption of processed foods, fruits, and vegetables for consumers in Italy, Spain, Chile, Colombia, and Brazil. They further demonstrated new purchasing habits, such as ‘conscious shopping’, ‘bartering’ for cheap items, and attention on ‘basics’ [53]. Alternatively, consumers preferred groceries as the food of choice and consistently anticipated spending most of their money on foods since they are one of the basic human needs [54]. Finally, studies by Ellison et al. [55] and Huang et al. [56] showed that consumers spent money on foods with a longer shelf life and easier access to the market. Rahman et al. found significant differences in food and nutrient consumption, with marked differences in ‘fruits and vegetables’, vitamin A, folic acid, calcium, iron, magnesium, phosphorus, and potassium, resulting in higher rates of inadequate nutrient intake for those consumers who frequently consumed take-out foods [40].

Proposition 4. *Current results show that consumers with a preference for nutritional quality of foods became more sensitive during the pandemic and beyond, spending more money and consuming more nutritional foods, such as grocery and fruits.*

3.5. Food Consumption and Ethical Concern

Nowadays, environmental aspects are of main concern for consumers, such as pollution, food production, environment, and food waste, which are ethical issues related to the impact of food consumption on the environment or society [57]. Climate activists, who are concerned about the deterioration of the planet from consumption, food choosers who are vegetarians and vegans, and conservation activists who have concerns about the preservation of existing goods via their reuse and repair are three of the five types of anti-consumers that have emerged following the pandemic with ethical concerns about the conservation of the planet [58].

Food waste can be approached from an ethical perspective. The awareness, understanding, and embracing of ethical attitudes related to food waste may lead to a consumer's behavior change. Crisis, such as the COVID-19 pandemic, has curbed food waste, which can have an impact on climate change and environmental pollution, according to a study by Caloran [59]. Young people seem to be sensitive to food waste effects on the planet, and how this generates an environmental impact in large cities [57]. In addition, this generation will try to change their attitudes to the requirements of environmental conservation and generate innovative solutions to ease the negative impact of an increased population on the planet.

Food consumption behavioral changes have altered the variety of foods [60]. The impact that food waste has on the environment has also been changed by the pandemic as reflected by the fluctuations and short-term alternatives in the consumption of foods [54]. Not only these changes have exacerbated food waste, such as overcooked foods, foods exceeding long-term storage in the freezer, and overbuying, but they have also favored a decrease in food waste, including less frequent shopping, more carefully planned meals, and consumption of the long-term stored food [57].

Above all, food shopping in the context of COVID-19 is now a more careful process, with close attention to one's need and money available. Health maintenance concerns as well as ethical concerns can lead to better behavior on food waste and environmental footprint [59].

Proposition 5. *Overall, the data show that food waste and environmental effects are two ethical parameters receiving increased attention from consumers during COVID-19 and beyond.*

3.6. Food Consumption and Weight Control

Older people and women have always been more concerned about controlling their weight and following diet and exercise programs [61]. With increased exercise and eating low-calorie, portion-controlled meals, including liquid meal replacements, they try to maintain weight loss [62].

Stress and boredom were two factors that led to overweight as consumers ate 'comfort foods' with sugar and consumed more energy/calories during the COVID-19 period [63]. This is a type of emotional state driven by affective (strong eating desire), behavioral (food seeking), cognitive (thoughts about food), and physiological (salivation) sensations. Fatty-sweet products and sweet-tasting beverages were consumed (including fruit juices) during snacking. Sweets, biscuits, cakes, soft drinks, and sugary foods led to an increase in energy intake and, thus, an increase in body weight during the pandemic [13]. Warning elements in body weight have been recorded during lockdown worldwide [64], probably due to physical activity reduction and increased consumption caused by isolation measures during the pandemic, which resulted in a higher incidence of overweight, obesity, and relevant comorbidities [65]. Only half of the adult population, with increased sweet consumption and less exercise, kept their body weight during the first six months of pandemic-related confinement in Belgium [27]. According to Kalligeros et al. [66], cardiometabolic disorders caused by weight and body fat gain following physical inactivity increased among patients with coronavirus disease. Furthermore, the studies by Wiklund et al. [67] and Lighter et al. [68] have shown that obesity is associated with more severe disease and COVID-19 outcomes. An unhealthy diet is known to lead to chronic inflammation and reduced defense against viruses [69]. In addition, unhealthy eating habits during the pandemic led to increased obesity and caused a chronic systemic inflammatory condition that, along with other chronic non-communicable diseases, such as dyslipidemia, hypertension, heart disease, diabetes, and lung disease, increased the risk of severe complications [70,71]. These studies showed an increase in body weight of women during the Coliform pandemic. Social support during COVID-19 was part of many obesity management programs and was connected with better dietary adherence, better weight management, and even a lower risk of mortality [72]. For both sexes, it may be necessary to improve and adapt weight manage-

ment goals. Ultimately, the best way to obtain all the necessary nutrients is a balanced diet to ensure normal immune system function while reducing the risk of obesity [72].

Proposition 6. *The present data indicate that lockdown resulted in an increase in overall food consumption and consumption of junk food on many occasions, which led to unbalanced body weight and disorders.*

3.7. Food Consumption and Mood and Stress

According to Singh and Mood [73], overeating and obesity are the results of changing food choice and intake due to changing mood and emotional eating, where these psychological “pathways” influence not only food choice but also the quantity and frequency of meals. Individuals are unable to perceive their state of hunger and satiety and show preference for palatable ‘comfort foods’ as a means of relieving their negative emotions. Furthermore, sweets, chocolate, cakes, and biscuits are more frequently consumed under stressful conditions, especially high-fat and energy-dense foods are chosen by people during stressful life events [74–76]. Food consumption has also been considered as a strategy for coping with stressful situations [77]. Indeed, it has been observed that anxiety and depressive symptoms lead to poorer food choices [78]. Moreover, it appears that individuals who experience periods of stress over-consume foods that they would usually avoid and this consumption makes them feel better [79].

The COVID-19 pandemic has drastically influenced consumers’ consumption and food choice behavior in relation to depression, stress, and anxiety [80]. The huge disruption in social interactions, contacts, and daily lives of consumers, increased unemployment, and business disruption have caused increased loneliness, fear of illness, financial stress, food insecurity, and insecurity about the future and livelihood [81]. Even families were affected and put under a lot of pressure when parents educated their children at home during lockdown and fed their children more often than usual. In addition, stress and negative emotions led to emotional eating, i.e., eating as a result of negative emotions without any real evidence of hunger [82]. Larger amounts of foods, such as sweets, fatty foods, and salty snacks, were reported to be consumed during the pandemic for emotional reasons. The negative impact on normal food consumption was fully mediated by emotional distress during the pandemic [63]. The role of emotional distress as a key mechanism to explain coping behaviors, such as comfort food consumption, which were adopted as a consequence of the economic, interpersonal, and health impact of the pandemic, was also revealed. In another study comparing behaviors among different sexes, women consumed larger amounts of high-sugar and high-calorie foods during COVID-19 for reasons of emotion, leading to greater weight gain compared to men [83].

Proposition 7. *The present data show an increase in food consumption during COVID and beyond due to a deterioration in mental health, such as depression, stress, and anxiety, which has continued globally to date.*

3.8. Food Consumption and Familiarity

Familiarity is the cognitive ability to apply knowledge acquired via experience to objects or stimuli [84]. Regarding everyday food choices, familiarity is important as it relates to the close relationship between a person’s eating habits during childhood, adolescence, and adulthood. Moreover, familiarity is due to previous personal experiences and tends to be linked to tradition, as many consumers prefer to choose foods that are familiar to them [85]. Still, familiarity is significant among those who have a relatively strong focus on prevention, who tend to be in good health, responsible, and safety oriented, and who consider their food a factor to cope with their stress and bad mood. However, consumers are demanding healthier food and, to meet this demand, technological solutions (such

as reduced-fat and functional foods) have been implemented, together with a return to naturalness and purity of food [86].

During COVID-19, familiarity helped consumers address anxiety and mood when choosing foods, sustaining a healthy diet through adherence to personal nutrition by selecting foods they know and trust [87]. The lockdown led consumers to become familiar with the internet and other technologies to order the foods that they knew and consumed, demonstrating that familiarity depends also on personal past experiences [20]. Familiarity, convenience, and price became more important in Croatian adults [46], but less so in French [13] and British adults (except price more) [47], and remained the same for Polish adolescents [33].

Proposition 8. *Overall, the present data prove that familiarity is a motive that has helped consumers cope with the pandemic as far as food choice is concerned and will also help them with online purchase, which has drastically increased to date.*

3.9. Food Consumption and Price

One of the most important determinants of consumption patterns and living standards is food prices. In particular, high prices can have a significant negative impact on nutritional status and health, especially among poor people [88]. Green et al. [89] showed that price changes in the global food market have a greater impact on low-income countries and the poorest households within these countries. In addition, interferences in the purchase and consumption of goods due to self-control problems or temporally inconsistent preferences of consumers, who derive direct satisfaction from food consumption itself, influence future health costs [90]. Low-income consumers have lower fruit and vegetable consumption and reduced intake of nutrients (e.g., calcium and vitamins) [91].

During the pandemic and periods of lockdowns, the global restriction on 'normal' economic production affected all aspects of life, including decisions regarding food purchase, leading to an unstable food chain [92]. The consequence of this situation was that prices increased, and many consumers were unable to buy enough essentials and foods. In addition, jobs were lost and consumers cooked more at home in order to reduce the cost of their daily meals [93]. The crisis revealed the compromises that households were willing to make in times of shortages [94]. What led many households to consume less and make more careful food choices was the increase in food prices combined with any loss of disposable household income [95]. The International Food Security Assessment model that estimates changes in food consumption and food gaps in developing countries uses gross domestic product (GDP) and food price changes as the main inputs for its predictions. The results show that the lockdowns led to a decrease in global GDP of 7.2 per cent, and an increase in grain prices of 9 per cent. These changes led to an increase in the number of food-insecure people in 2020, totaling 211 million (a 27.8 per cent increase) [95]. In the post-COVID-19 era, price promotion policies are a common practice worldwide in order to control the price increase; however, this results in food waste by encouraging over-purchase, according to half of the reported studies [96]. In contrast, the other half of the studies prove that consumers buying price-promoted foods show average or even lower levels of household food waste [96]. Low-income households, due to the pandemic, may not have the financial resources to engage in any stockpiling behavior compared to higher-income households. In addition, important price shocks negatively affect household consumption patterns of low-income groups [97].

Proposition 9. *The findings indicate that price remains a major food choice motive during COVID and beyond, with low-income groups being more affected by the foreseeable economic global recession. Therefore, it may be the most important selection criterion, among the 10 presented motives, for food choice in the new era.*

3.10. Food Consumption and Shopping Frequency Behavior

Consumers' low income leads them to shop less and at longer intervals, which affects the sustainability and shelf life of perishable foods, such as vegetables and fresh fruits [98,99]. There are also those consumers who either do not have access to a supermarket or grocery store [100], or do not have transport to make it easier for them to buy foods from the store they want themselves after comparing prices [101].

During the pandemic, consumers were forced to adapt their behaviors, including their food purchasing habits and their preferences, to the new routine. Schools were closed, homework was imposed, and except in certain specific occupational areas (e.g., working in hospital, in grocery stores), leaving home was only allowed under restricted conditions following the completion of special certificates [82]. Consumers' eating habits were significantly affected by perceived risk and precautions related to the COVID-19 virus, resulting in major changes in consumers' shopping behavior [102].

Children's eating behavior and feeding practices changed through changes in their appetite, enjoyment of food, responsiveness to food, and emotional overeating, as well as frequency of snacking between meals which was enhanced by parents who became more indulgent [103]. Furthermore, as demonstrated by Moynihan et al. [104] an increased intake in energy was connected with high levels of boredom. The COVID-19 pandemic altered the content of meals for a proportion of consumers [105] as well as the frequency of their consumption [82], leading to an increase in demand for food [106]. As a consequence, the food industry and food production chain have been adapted to the new situation and consumers' demands [106].

In addition, online shopping had become the first choice during the home restriction, and the demand for online food shopping increased significantly for both food and wine [107,108]. As the COVID-19 pandemic had completely disrupted food production and food supply chains due to unavailable labor, lack of transport, and closure of various food services, such as restaurants [109], it is inevitable that a major change has been observed in the way households buy, prepare, and consume food [110]. A significant shift to traditional foods has also been studied with similar results [111,112]. Consumers must learn how to use e-commerce, ICT technologies, and credit card payment in order to facilitate food shopping and avoid crowding. This also demands the presence of an online mechanism for protection of personal and transactional data to avoid online attacks [113].

Proposition 10. *Overall, it appears that, due to lockdown, shopping frequency decreased with a parallel increase in online purchase and delivery, a tendency which has continued to date.*

A main limitation of this scoping review is the short-term nature of the studies included (2020/2021/2022) and, therefore, there is limited literature available based upon which a discussion of the findings was presented. However, the review type chosen was viewed as the most appropriate for the current topic.

Table 1. One hundred and seven papers in this review divided by theme and sub-theme.

Theme for Discussion on Food Consumption	Sub-Sections	Paper Reference Numbers
(1) Health	Chronic food-related diseases	[15–18]
	Health behavior	[20–26]
	Health attitudes	[7,19–21]
	Physical activity	[3,27–30]

Table 1. Cont.

Theme for Discussion on Food Consumption	Sub-Sections	Paper Reference Numbers
(2) Convenience	Ready meals	[31–33]
	Fast food	[34–36]
(3) Sensory Appeal	Taste, smell, texture, and appearance	[13,37–42]
(4) Nutritional Quality	Diet quality	[6,9–11,43–45]
	Better quality	[46–51]
(5) Ethical Concern	Environmental aspects	[52,53]
	Food waste	[54,55]
(6) Weight Control	Weight loss	[56–58]
	Obesity	[59–64]
	Balanced diet	[65–67]
(7) Mood and Stress	Emotional eating	[1,8,68–74]
	Depression and stress	[75–78]
(8) Familiarity	Cognitive ability	[2,4,79,80]
	Trust	[81,82]
(9) Price	Low-income consumers	[83–86]
	Food compromises	[87–90]
	Price-promoted foods	[91,92]
(10) Shopping Frequency	Food shopping behavior	[93–97]
	Food shopping frequency	[5,98–101]
	Online shopping	[102–105,108]
	Traditional foods	[106,107]

4. Conclusions

FCMs, based on the reviewed data, have been affected by the COVID-19 pandemic in certain ways, which are affecting consumers' choice beyond the pandemic in the new economic era. Of the ten motives presented in this review, food price seems to be the most important motive for consumers during and post-COVID-19 periods and will be more significant if a global recession is under way. Decreased physical activity, as well as increased mental disorders related to stress and anxiety, had a negative effect on health, weight control, and mood and stress motives, along with increased food consumption, especially junk food. On the other hand, the lockdowns had a positive impact on other motives, such as convenience and familiarity, and a negative impact on shopping frequency motive, with increased online and takeaway purchase of foods. Food waste and its effects on the environment seem to be the parameters concerning motives such as ethics and nutritional status. Nutritional quality and sensory appeal are two consumer motives which have not been affected significantly by the pandemic.

Raising consumer awareness of the incentives for food choice is of paramount importance in the new post-COVID-19 era where the world is changing drastically. Motivations, such as sensory appeal, taste, and food presentation, can act as a one-way street for emotional eating in the new era since they remain as important as before the pandemic. Family members, feeling secure and having high feelings of self-esteem when preparing a pleasant dish, bring the family together and create a context of daily stability, where people know what to expect with familiar dishes and can assess whether hunger and nutritional needs

will be met. In addition, price as an incentive for food choice becomes important due to uncertainty about work and economic future and a sense of impending precariousness experienced by affected consumers. Still, changes in food choice incentives have led to an increased awareness of food choices, with the aim of sustaining health through quality food, ensuring healthy eating behaviors and attitudes toward food waste, and meeting environmental footprint and ethical concerns. In addition, online shopping is a rising choice for consumers, a habit that has emerged due to home confinement and the demand for online shopping has increased significantly.

Finally, could the pandemic be assumed to be the threshold at which the usual rules behind food choices are suspended? The definite answer will be known in three to five years when the new worldwide economic and social condition will be clear and stable, and an adequate number of studies will be published by then. In this review, we present the studies that have reported to date, with the above conclusions derived from their results so far.

It would be more workable if consumers are encouraged to explore healthier food options, such as fresh fruits, vegetables, and whole foods. In addition, when purchasing foods, they should be informed about the foods and their beneficial properties (e.g., vegetables, fruits, and organic wine) and reflect more on the importance of certain foods to themselves and their families through their cultural identity. Online food shopping can surely contribute to a reduction in food waste thanks to the elimination of frenzied shopping routines at supermarkets or groceries and can open up space to new fields of study. On the other hand, defining a “new” index of consumer satisfaction can alter the sale strategies of retail managers and entrepreneurs.

The present review, which is based on the findings reported so far, offers 10 specific propositions for each one of the 10 main food choice motives examined, which can be used as a practical and theoretical basis for the development of a “new” FCM index that can be used by retail managers, food companies, and any other parties involved in the agri-food chain.

- Regarding the health motive, physical activity should be re-emphasized to return to normal conditions and consumers should be directed to healthy, rather than junk, foods after the pandemic.
- Regarding the convenience motive, emphasis should be given to the purchase of takeaway foods and ready-to-go meals since they are going to be more and more in use by consumers in the new era.
- Regarding the sensory appeal motive, no significant changes are predicted for consumers in the future.
- Regarding the nutritional quality motive, consumers choosing their foods in the future will place more emphasis on their nutritional indications.
- Regarding the ethical concern motive, consumers will consider food waste and environmental impacts more when choosing their foods in the future.
- Regarding the weight control motive, an emphasis should be given to a balanced body weight with proper food selection for a healthy life, which can result in less disorders, after the pandemic
- Regarding the mood and stress motive, a return to normal mental conditions, following the end of lockdowns, should decrease the unusual and dangerous increase in food consumption recorded during the pandemic.
- Regarding the familiarity motive, consumers are going to use it as a major criterion to purchase food online in the future, and, therefore, it should be considered more carefully in the future.
- Regarding the price motive, consumers are going to depend heavily on it for their selection and purchase of foods in the future, thus becoming their priority motive.
- Regarding the shopping frequency behavior motive, consumers will avoid shopping in person in the future and turn more and more to online purchase and delivery of foods.

Despite the abovementioned conclusions, more studies are needed in the years to come to ensure their validity since only studies from a three-year period are recorded so far (2020–2022).

Furthermore, studies with longer time periods beyond the pandemic should be performed to ensure the long-term validity of the conclusions.

Finally, studies on consumer segments, such as young adults, older people, and children, will be very important to verify these findings and their applications to food choice motives.

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