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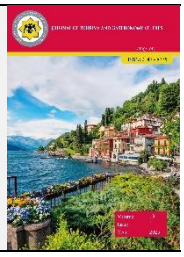

Exploring Breakfast Food and The Nutrient Density: An International Perspective

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Abstract

Breakfast is generally considered the most important meal of the day. Several studies have shown that there is a relationship between eating breakfast and chronic illnesses such as cardiovascular disease, obesity, and metabolic syndrome However, there is no scientific consensus on what constitutes a quality or nutritious breakfast, nor is there a consensus on what constitutes a breakfast meal. While people are consuming breakfast goods more quickly to adapt to the changing lifestyles of today, traditional and incredibly nutritious breakfasts are still enjoyed in many nations. Different cultures, geographical regions, and times have developed diverse eating patterns and conventional meal compositions, including breakfast. Therefore, this research aims to fill this knowledge gap by providing insight into the traditional breakfast cuisines and current breakfast habits of some selected countries. Moreover, the present study also evaluated the nutrient density of a general breakfast meal in each country. In this context, we organized a breakfast meal that included the greatest consumption of food and beverages among the breakfasts belonging to the countries and then calculated Nutrient Rich Food Index (NRF) 9.3. As a result, the NRF score of counties ranged between 25.49 and 42.59, Western-style breakfast including breakfast cereals with whole-cow milk, had an NRF score of 11.37. Consequently, there is a clear need for the preservation and promotion of traditional breakfast practices, even as the food industry is urged to focus on improving the nutritional quality of Western-style breakfast options.

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INTRODUCTION

Breakfast being the most important meal of the day has been almost a universal reality since nutritionist Adelle Davis famously said, "Eat breakfast like a king, lunch like a prince, and dinner like a pauper." (Delley & Brunner, 2019). From a gastronomic point of view, breakfast was for centuries the least demanding of our meals. From a culinary point of view, it traditionally dates back to Greek and Roman breakfasts (ariston and Ientaculum, respectively), being a simple meal consisting of bread, cheese, honey, oil and perhaps wine. Therefore, it has been a meal characterized by ease from very early times, as none of these ingredients require preparation or further cooking (Gibney et al., 2018).

Breakfast is generally considered the most essential meal of the day. Several studies that examined the correlation between eating breakfast and the incidence of diseases concluded that people who skipped breakfast had increased risks of developing chronic illnesses such as type 2 diabetes, cardiovascular disease, obesity, and metabolic syndrome (Batista-Jorge et al., 2016; Kubota et al., 2016; Uzhova et al., 2017; Yoo et al., 2014). In addition to breakfast consumption, breakfast composition is also of capital importance. Breakfast composition has also been shown to affect body mass index and the risk of developing many noncommunicable diseases; high-fat and processed foods (processed meat, cheese, and margarine) are linked to increased risks, whereas cereals (perhaps in combination with dairy) play a protective role (Deshmukh-Taskar et al., 2013; Iqbal et al., 2017; O'Neil, Nicklas, et al., 2014).

History shows how different cultures, geographical regions, and times have developed diverse eating patterns and conventional meal compositions, including breakfast. As a result, there are still varying definitions and conceptions of what a breakfast meal is. There is no scientifically grounded consensus on what constitutes a "quality" or nutrient-dense breakfast, and there is also little agreement on what constitutes a breakfast meal (Betts et al., 2016; O'Neil, Byrd-Bredbenner, et al., 2014). A systematic review of the quantity, content, and context of breakfast intake in westernized nations indicates that, across all age groups, ready-to-eat cereals and dairy are the most often consumed breakfast meals, followed by fruit, fruit juice, and bread. The authors noted that "many studies reported nutritional content rather than actual foods consumed". Because of this, making any conclusions is difficult (Mullan & Singh, 2010). Despite the extensive body of research linking breakfast consumption with positive health outcomes, significant gaps remain in our understanding of what constitutes a quality or nutrient-dense breakfast. Existing studies often focus on nutrient content rather than on the actual foods consumed, and there is little consensus on the definition of a nutritionally adequate breakfast across diverse cultural contexts. Even though breakfast energy intake may be similar in different nations, local breakfast food preferences and the cultural background of the breakfast meal itself vary greatly. The duration and composition of breakfast have fluctuated greatly throughout history, owing to social and regional factors, and this variation continues to occur (Gibney et al., 2018). This changing breakfast culture can also be seen as a reflection of the worldwide culinary scene, where local foods, traditions and historical settings come together to create unique culinary identities. World cuisines, generally categorized under nine main headings, include French, Turkish, Far Eastern, North and South American, Southern European, Northern European, Central Asian, Middle Eastern, and African cuisines. Within Europe, countries such as Türkiye, Spain, and France, with their geographic location and diverse agricultural products, contribute to the richness of breakfast cultures (Kurt & Dłużewska, 2018). In this context, the breakfast culture and habits of French Cuisine, Turkish Cuisine, Spanish Cuisine representing Southern European Cuisine and British Cuisine representing Northern European Cuisine were

evaluated. Furthermore, the study provides a comprehensive analysis of the nutrient density of traditional and contemporary breakfast meals across cultures, providing a new and systematic approach to understanding global breakfast patterns and their nutritional implications from selected countries with different culinary heritages.

Turkish Breakfast Cuisine Culture

Turkish cuisine is an important cuisine with many varieties; it has an important place in the Turkish cultural structure and is among the few cuisines in the world. Turkish cuisine ranks third in the world, with the cuisines of countries such as China and France. Cultural interactions in the recent centuries, being the continuation of a state that ruled over 3 continents, geographical location, etc., are many more reasons for having such a diverse and rich culinary culture (Çakıcı & Seçkin, 2016).

In Turkish culinary culture, many symbolic flavors are fed by traditions and vary according to meals. Breakfast products are considered one of these flavors. Breakfast, which is considered the most important meal of the day (Spence, 2017), has an important place in almost every culture. The word breakfast, formed by the combination of the words "coffee" and "bottom", refers to the first meal eaten before drinking the first coffee of the day in Türkiye (Ozden, 2020).

Typical breakfasts in Türkiye include products such as tea, cheese, olives, and jam. However, there are significant differences in the types of products offered across regions (Ozden, 2020). The Turkish breakfast meal is characterized by the inclusion of its signature tinned white sheep cheese and its varieties, butter, jam, honey, sucuk (dry, uncooked, cured, and fermented sausage), pastırma (seasoned, air-dried, cured, pressed, and nonfermented beef cut), olives, boiled and fried eggs. In addition, vegetables (such as tomatoes, green peppers and cucumbers), simit (Turkish bagel), and pastries (poğaça, börek, gözleme, cookies and buns) and fruits (such as apples, pears, oranges, watermelon and melon) are used for breakfast. Another characteristic of Turkish-style breakfast is that tea is brewed and served in a Turkish style (Kilic, 2009; Say et al., 2018). One of the most famous Turkish breakfast components is menemen, which is made with tomatoes and peppers traditionally prepared in summer and scrambled eggs with sausage and bacon in winter are served at breakfast tables. In addition, the type of eggs called "Scrambled Eggs" by the British, which are cooked by beating with milk or cream, have also started to take place on breakfast tables. In recent years, salami and sausage varieties from European breakfast culture have been seen on Turkish breakfast tables (Ozden, 2020).

Türkiye has a breakfast culture that varies according to region and locality. Factors such as the geographical structure, climate and eating habits of people can be the main reasons for this rich diversity (Çekal & Doğan, 2021). In Eastern Anatolia, cuisine is based on animal products and this is reflected in the breakfast menu with the use of a wide variety of cheeses, especially sheep milk, cream, butter, yogurt with herbs, and breakfast meats such as sausage and roasted meat (Ozden, 2020). In the Central Anatolian region, breakfast is quite common with not only bread varieties but also other varieties such as katmer, stuffed pancake, pastry, and poğaça, as well as flour-based products such as cheese varieties, clotted cream, butter, eggs, molasses and tahini (Ozden, 2020). In the Black Sea region, the commonly used ingredients are corn flour, mıhlama and kuymak prepared with butter made from corn flour and local melted cheese consumed for breakfast. Mıhlama and kuymak differ in terms of region (Ozden, 2020; Şen, 2020). When we look at the culinary culture of the Aegean region, fresh herbs, regional cheeses and olive oil come to mind first Aegean (Say et al., 2018). In the Marmara region, feta cheese, mihaliç cheese, sooty Circassian cheese, Abaza

cheese, Thracian kashkars, Hayrabolu – cheese from Lahana village fresh village cheese, and taraklı keş cheese take their place as breakfast foods. There is also bread with eggs, Istanbul bagels, famous Gemlik olives and jams made with grapes (Çekal & Aslan, 2017). The typical components of a Turkish breakfast are given in Figure 1.

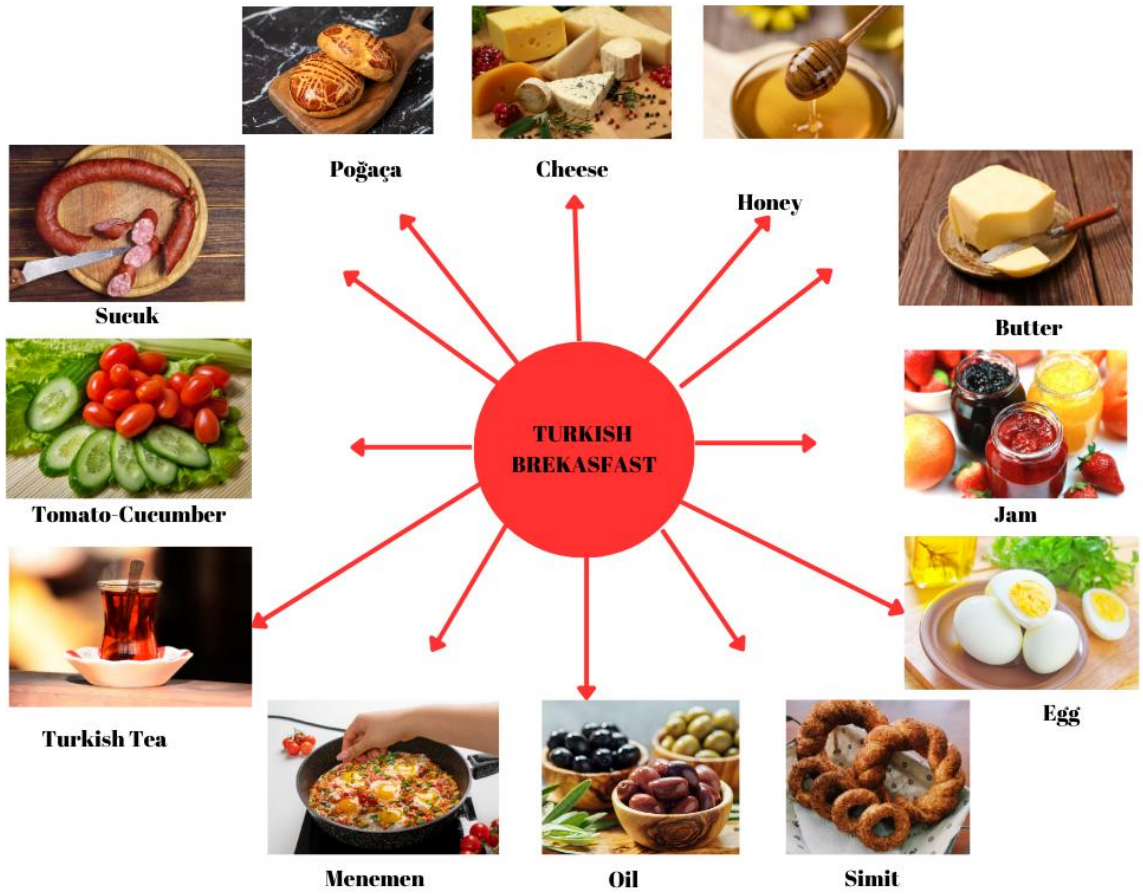

Figure 1. Preferred Foods for Turkish Breakfast

English Breakfast Cuisine Culture

Since England is an empire, many products from other countries worldwide have been brought into culinary culture because of the benefits provided by this feature. Products, especially those from colonial countries, are the basic products of cuisine. Famous foods and beverages include black pudding, eggs, bacon, pork sausage, fried tomatoes, black pudding, cheese varieties, alcoholic beverages, donuts, cakes, jams and hamburgers, tea, cream, jam and rolls (Hope, 2011). The starting meal of the day is the full English breakfast, which is one of the most important values in British culinary culture (Williams, 2024).

The history of English breakfast culture dates back to the Middle Ages. Breakfast was served late in the morning and consisted only of beer, bread, a small amount of cheese, cold cuts, or drippings (a cooking oil that melts and drips off while frying meat). During the reign of Queen Victoria, the upper class entered a period of decline in terms of social classes. In response, a new wealthy class consisting of merchants and industrialists began to emerge. This people, who wanted to advance themselves socially, examined some of the habits of the upper class and the traditions of village houses and adopted the idea that the English breakfast was an important social phenomenon (O'Connor, 2009).

The Edwardian era is known as the golden age of long, enjoyable breakfasts in the British Empire, which became "the empire on which the sun never sets". Today, the emergence of what would become known as the English breakfast, served in hotels, restaurants and meetings around the world, first began in this period. As previously mentioned, the English breakfast tradition spread from the middle class to the working class and reached its peak in the early 1950s, when approximately half of the British population started their day eating a very similar English breakfast consumed today (Wright, 2011). At this point, the English breakfast has no longer become a meal only for the wealthy. It is understood that having a full breakfast before starting the day can be a good alternative for the middle class, given the increasing workforce and the need for energy throughout the day.

The idea of a “Full English Breakfast” was first popularized by those attending traditional prehunt celebratory breakfasts in large rural communities in England. However, the components of the full English breakfast consumed at that time differ from the version known today. It is known that it is consumed as a magnificent breakfast feast, including dishes such as baked halibut, fried haddock, fig compote, pheasant leg, grilled kidney, pulled poultry, sheep tongue, potted pigeon, and collared pigeon (O’Connor, 2009). For more than two centuries, the tradition of the “Full English Breakfast” has had an iconic place in British culinary culture and is still passionately maintained by different generations of British society; therefore, the traditional full English breakfast is popular in family kitchens around the world, especially in the United Kingdom. It is still served in hotels and bed and breakfast establishments (Bule, 2018).

A "Full English Breakfast", which has no fixed or specific ingredients and may also be called a 'fry-up', consists of a fried egg, bacon, sausage, mushrooms, tomatoes and toast (Figure 2.) It is usually accompanied by a slice of white or black pudding (a type of blood sausage containing beef blood, pork, onion, oatmeal and some aromatic ingredients). Tea or coffee is often preferred as a beverage. Currently, other products such as beans and french fries, can also be found in this type of breakfast (Wright, 2011).

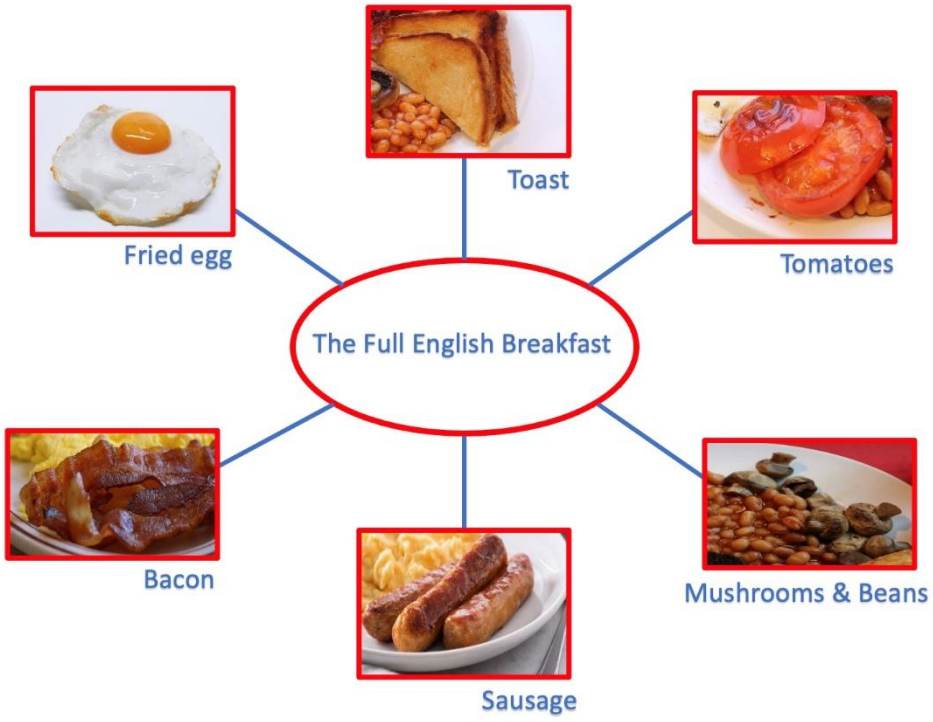

Figure 2. The Full English Breakfast ingredients

French Breakfast Cuisine Culture

The prestige of French cuisine, together with its “traditional eating habits, local specialties and rich culinary culture”, was reinforced in 2010 when France became the first country whose gastronomy was recognized as an “intangible cultural heritage” by UNESCO in 2010 (UNESCO, 2010). Every year, millions of people visit it, including local visitors from other French areas, who enjoy the country's cheese, wine, and specialty routes during festivals (UNWTO, 2012). It was codified by Auguste Escoffier in the twentieth century to become the modern reference for fine cuisine (Julien-David & Marcic, 2020).

Generally, it is possible to mention two types of cuisine in France in the literature. First, French chefs developed a cuisine called Haute Cuisine (Grande Cuisine), in which the traditional was purified and reconsidered, including new techniques and eating and drinking rules. The other concept is traditional cuisine, which involves home-style cooking methods that include traditional recipes passed down by the French from generation to generation (Waldee, 2002). With its potato soufflé recipe, it rose to prominence in the 19th century, the "golden age of potatoes," and became one of the treasures of French cuisine. Bread is considered holy in France; soup is consumed for every meal of the day, saving snacks, and wine is highly prized. Cake is regarded as the main dessert (Julien-David & Marcic, 2020).

The French consume bread, especially baguette, in every meal. Charcuterie (paté, cured sausage, ham) comes with cheese and is found alongside crudités (chopped carrots, tomatoes, cucumbers, green salad, pink radishes) and main courses. The four-meal-a-day pattern (breakfast, dinner, snack and dinner) has not changed much from one century to the next (Grignon, 2009). Normal eating means, first, "eating three meals a day" and not skipping any of them (Grignon, 2009; Julien-David & Marcic, 2020). Milkshake is the most frequently consumed beverage and the main ingredient of the 'traditional French breakfast' (Lepicard et al., 2017). The traditional French breakfast consists of coffee consumed with croissants (moon-shaped openings), baguette bread or French toast made by sprinkling powdered sugar on egg bread. Croissant is consumed by dipping it into coffee (Preziosi et al., 1999). It also includes food and beverages such as cakes filled with chocolate, toasted baguettes spread with butter, jam, milk and coffee. The typical components of a French breakfast are given in Figure 3.

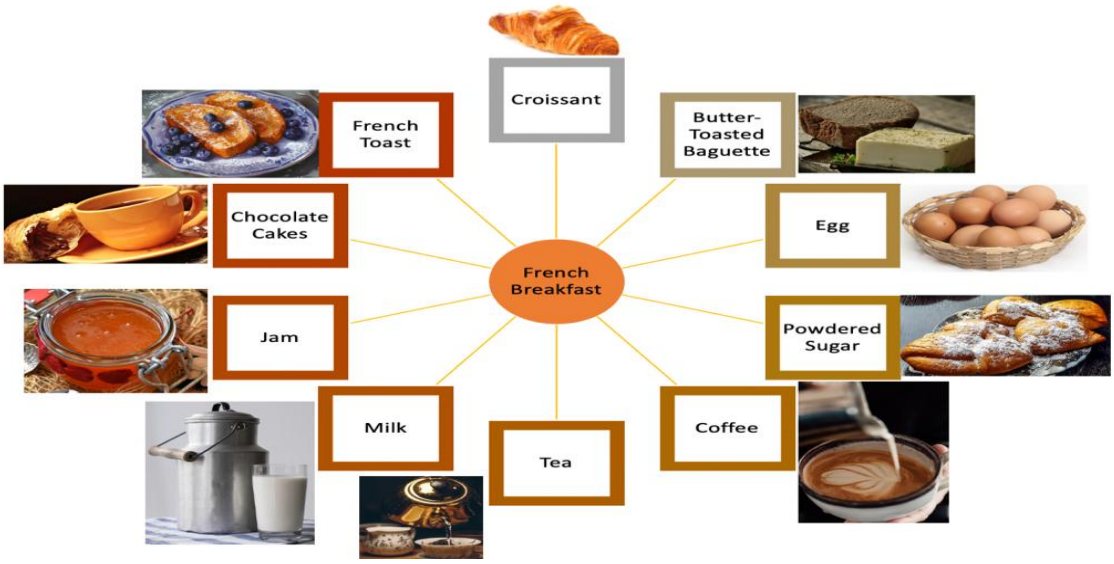

Figure 3. Preferred Foods for French Breakfast

Spanish Breakfast Cuisine Culture

Spain is a country in southwestern Europe and occupies most of the Iberian Peninsula (Medina, 2005). Gastronomy has always been highly importance in Spain. Spanish cuisine has developed around strong regional identities and representative elements that have changed over the centuries (Gheorghe & Bulin, 2014; Medina, 2005). There is a wide variety of dishes, which vary due to differences in the geography, culture and climate of the regions of the country. The type of food is largely based on the region of origin (Gheorghe & Bulin, 2014; Medina, 2005).

The Spanish meal consists of three main meals and two snacks (morning snacks and tea). In Hispanic countries, a light meal is served for breakfast (Clutter & Nieto, 2009; Coxall, 2018; Méndez, 2014). Typically, a light breakfast is eaten early in the morning, followed by a typical breakfast at about 11.00 a.m. (Akyürek, 2018). Since eating and drinking are social acts for Spaniards, it is preferable to have breakfast with family/friends (Coxall, 2018).

In the morning, Spaniards do not eat much, and many Spaniards start the day with just coffee as a light breakfast. Later, in the morning, people in Spain mostly consume tostada, tortillas, bocadillos, cheeses, yoghurt, muffins, biscuits, buns, pastries, cookies, breakfast cereals, fruit, milk, coffee with milk, juice or coffee with a typical breakfast (Bartrina, 2004; Ruiz et al., 2018; Vretlund Lust, 2013). One of the most famous cheeses from breakfast is high-quality goat milk cheeses made by cheese makers in Castilla v León. Valdeón, a blue-veined combination of goat milk and cow milk, is another excellent cheese. It matures for three months in limestone caves covered with oak or plane leaves until it becomes creamy soft (Lopez-Diaz, 1995; Martínez, 2011). Tostada is one of the most traditional Spanish breakfasts. Baguette bread is cut in half lengthwise, toasted and spread with good-quality olive oil. If desired, tomato sauce, garlic puree, Manchego cheese (made from the milk of Manchega sheep), or ham or jam (blueberry, orange, pepper, etc.) can be spread on it, the most popular being tomato tostada. In rural areas, breakfast is in the form of baguette bread with something such as a slice of tomato and ham or chorizo (a hard and spicy pork sausage). Another famous breakfast product in Spain is tortillas, a type of omelette (Baztán, 2021). The classic tortilla consists of a mixture of potato cubes fried (golden color) in olive oil and fried onions (not crispy), topped with well-beaten egg and spices of choice. There are other types of tortillas: peasant-style tortillas are made by adding cooked peas and diced carrots, diced prosciutto (uncooked, smoked and dry-cured ham) and diced Spanish chorizo to the above ingredients. Tortillas can be consumed hot or cold or at room temperature. Another interesting combination is the tortillas made with chickpeas (instead of potatoes), onions, spinach, garlic and eggs. Optionally, there are tortillas that use white beans, onions, red and green peppers, mushrooms, garlic and parsley (Rector-Cavagnaro, 2009). Spaniards can also consume in the middle morning as a typical breakfast bocadillo (usually a sandwich made of baguette or a similar type of bread cut lengthwise and filled with ingredients according to preference) with sausage/chocolate/cheese. Everything from cheese to ham, eggs to sausage, and fish to vegetables can be added (Bartrina, 2004).

Breakfast is often accompanied by a churro, a sweet pastry in Spain. The dough for churro, a popular crunchy snack, is prepared by cooking in a pot with flour, salt, butter and water; it is cut into strips and fried in oil. Once fried, it is coated with sugar or a cinnamon-sugar mixture (Coxall, 2018; Morales & Arribas-Lorenzo, 2008). This popular dessert is often served with hot chocolate (Coxall, 2018; Moolwong, 2020). The typical components of a Spanish breakfast are given in Figure 4.

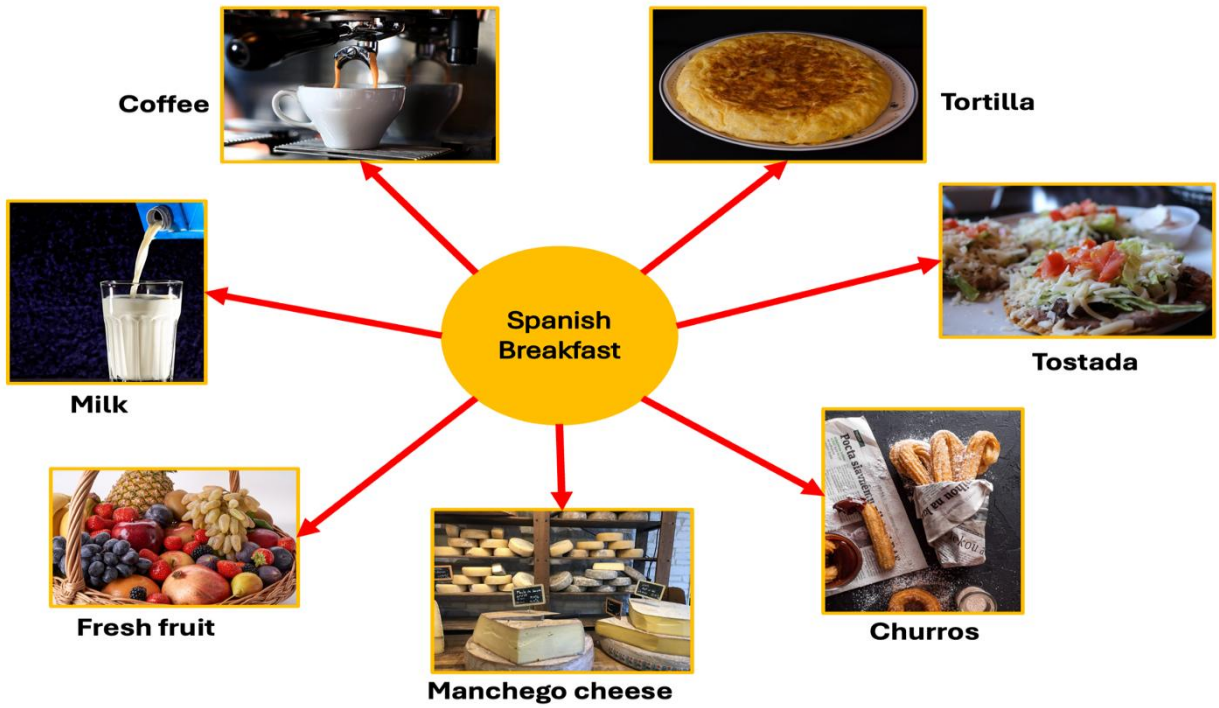

Figure 4. Preferred Foods for Spanish breakfast

Throughout history, significant cultural and sociocultural changes have influenced eating habits and culinary traditions around the world. In light of these shifts, the current research provides insight into both the traditional breakfast cuisines and the contemporary breakfast habits of selected countries renowned for their world-famous culinary traditions. This study addresses these deficiencies by systematically comparing traditional and contemporary breakfast habits across selected countries. Specifically, the study evaluates the nutrient density of a general breakfast meal in each country by organizing a breakfast that reflects the most commonly consumed food and beverages, and then calculating the Nutrient Rich Food Index (NRF) 9.3. By integrating cultural insights with a robust nutritional evaluation, our research provides a unique contribution to the literature, offering a comprehensive framework that not only enhances our understanding of breakfast's nutritional value but also informs public health strategies aimed at improving dietary practices worldwide.

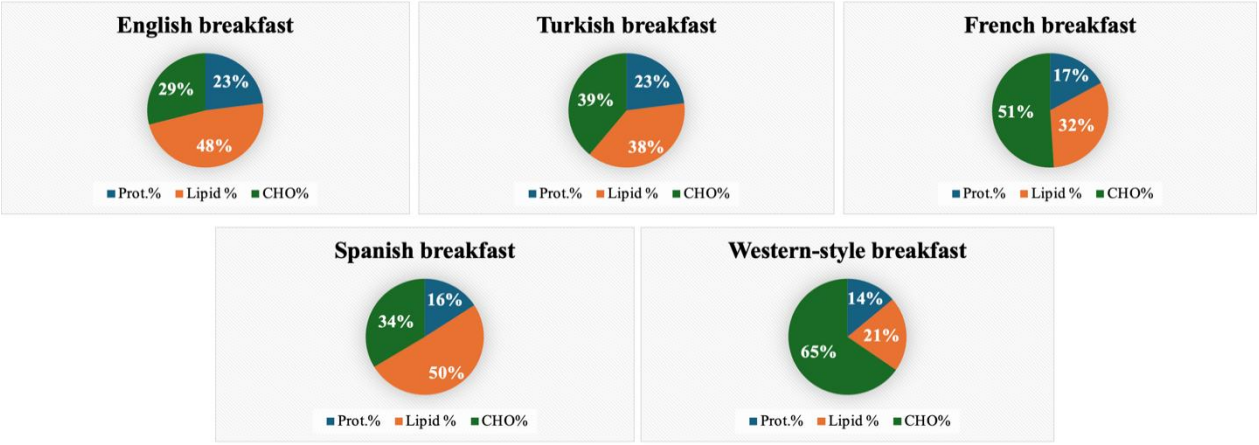

Figure 5. The macronutrients composition of typical breakfast in the countries

Method

To evaluate the nutrient density of a general breakfast meal in each country, the authors organized a breakfast meal that included the greatest consumption of food and beverages among the breakfasts belonging to the countries. The selection of the most frequently consumed foods and beverages for each country's breakfast was based on a comprehensive review of the literature. Specifically, our choices were informed by the following sources:

- English Breakfast: Data were drawn from Wright (2011), which provided detailed insights into consumption patterns.

- Turkish Breakfast: The selection was based on findings from both Kilic (2009) and Say et al. (2018), ensuring a robust representation of traditional Turkish breakfast habits.

-French and Spanish Breakfasts: Consumption data were derived from Preziosi et al. (1999), which offered a thorough account of typical breakfast items in these countries.

Additionally, the weights used for each product were obtained directly from these studies, providing an accurate representation of the relative consumption of each item in the respective countries. These references served as the empirical foundation for identifying both the most common breakfast components and their corresponding consumption weights, ensuring the reliability and consistency of our analysis.

In this regard, fried egg, toast, tomatoes, bacon, mushrooms, beans, sausage was chosen for the full English breakfast. For Turkish breakfast, tea, boiled egg, cheese, olive, tomatoes, cucumber, butter, honey and bread were chosen. While coffee and French toast was chosen for French breakfast, coffee with milk, tostada and cheese was chosen for Spanish breakfast. Moreover, breakfast cereal with milk was considered as Western-style breakfast (Kuwahara et al., 2022). The weights used for each product were given in Table 1.

The nutrient profile of the breakfast meal in each country was examined with the Nutrient Rich Food Index (NRF) 9.3 (Drewnowski, 2009). According to this index, the sum of the daily values of nine nutrients recommended for dietary intake (protein, fiber, vitamins A, C and E, calcium, iron, potassium and magnesium) in percentage terms was calculated as the positive subscore (NRF9), the sum of the daily values of three nutrients recommended to be limited in the diet (saturated fat, sodium and added sugar) in percentage terms was calculated as the negative subscore (NRF3) and the final score was determined by subtracting the negative subscore from the positive subscore. All nutrient amounts of the breakfast meal formed for each country were converted to percentage daily values (%DV) per specified reference amount of food. The reference daily values for the nutrients used in the calculation were based on the work of Drewnowski et al. (2009): protein, 50 g; fiber, 25 g; vitamin A, 5000 IU; vitamin C, 60 mg; vitamin E, 30 IU; calcium, 1000 mg; iron, 18 mg; potassium, 3500 mg; magnesium, 400 mg; saturated fat, 20 g; sodium, 2400 mg and added sugar, 50 g. In the calculation, nutrients were evaluated according to the amount of 100 kcal energy (Drewnowski, 2009; Hess & Slavin, 2017).

The full version of the BEBIS-8.2 (Nutrition Information Systems Software-8.2) computer program was used to enter gram amounts of nutrients consumed and analyze total energy and other nutrients. The energy and nutrient contents of the bacon and sausage were obtained from the USDA National Nutrient Database (USDA, 2023). The average daily requirements of nutrients used in the calculation of NFR9.3 scores were based on the amounts determined by international authorities (EFSA, 2009; FDA, 2020; NNR, 2014). We then calculated the NRF score

for each breakfast meal (Drewnowski, 2009). It has been reported that as the NRF9.3 scores increase, the nutrient density per 100 kcal increases. Therefore, a high NRF9.3 score represents a healthier dietary pattern than a low NRF9.3 score (Streppel et al., 2014).

Findings

The NRF9.3 score of the breakfast meal in each country was shown in Table 1. Additionally, the Figure 5 shows the macronutrient composition of typical breakfasts in these countries, as well as the Western-style breakfast consisting of breakfast cereal with milk.

Table 1. The energy content and NRF score for each breakfast meal that includes the most consumption of food and beverages in the breakfast belonging to the countries.

Breakfast of Country	Ingredient		Energy (kcal)	NRF9	NRF3	NRF 9.3
English breakfast	Fried egg	50 g	845.87	58.22	15.62	42.59
	Toast	60 g				
	Tomatoes	140 g				
	Bacon	30g				
	Mushrooms	100 g				
	Beans	50 g				
	Sausage	50 g				
Turkish breakfast	Tea	150 ml	350.23	59.97	23.81	36.15
	Egg	50 g				
	Cheese	40 g				
	Olive	15 g				
	Tomatoes	50 g				
	Cucumber	75 g				
	Butter	3 g				
	Honey	5 g				
	Bread	50 g				
French breakfast	Coffee	240 ml	269.48	44.29	18.80	25.49
	French toast					
	-Bread	50 g				
	-Egg	50				
	-Powdered sugar	5 g				
	-Blueberry	20 g				
	-Raspberry	20 g				
	-Butter	5 g				
Spanish breakfast	Coffee with milk (café con leche)	240 ml	446.45	50.65	19.49	31.16
	Tostada					
	-Bread	50 g				
	-Tomatoes	100 g				
	-Olive oil	10 ml				
	-Garlic	1 g				
	Cheese	40 g				
Western-style breakfast	Breakfast cereal	40 g	241.59	31.75	20.39	11.37
	with milk	150 ml				

The NRF9.3 score of all breakfasts was ranged 11.37-42.59. While the NRF9.3 score of the Turkish breakfast was 36.15, second highest score, English breakfast score was 42.59, the highest score. On the other hand, the NRF9.3 score of the French breakfast was found 25.49 when Spanish breakfast score was 31.16. In terms of the Western-style breakfast model, the NRF9.3 score was 11.37, the lowest score. English breakfast had more protein, fiber, iron, magnesium, potassium because of egg, bacon, mushrooms, beans and sausage so the NRF9 was also the highest score. In parallel to this, the NRF3 was the lowest score since the amount of saturated fat, added sugar and sodium

in these foods is low. Moreover, English breakfast had the highest energy content (847.87 kcal). On the other hand, although the Turkish breakfast had high protein content from eggs and cheese and moderate calcium, magnesium and potassium contents, NRF 3 was the highest score owing to the high amount of saturated fat in cheese and butter, the high amount of sodium in cheese and olive and the high amount of sugar from honey. The energy content of Turkish breakfast was 350.23 kcal which was the third highest level. While the French breakfast did not have a high NRF 3 (because it is low in foods that are sources of sugar and saturated fats), the NRF 9 was also the lowest among countries because it had the lowest protein content (it had only an egg as a protein source). Its energy content was also the second lowest level at 269.48 kcal. Like the Turkish breakfast, Spanish breakfast also had higher NRF9 score because of the higher protein from milk and cheese, with higher NRF3 score, so its NRF9.3 score was the third highest score with 31.16. The energy content of the Spanish breakfast was the second highest level at 446.45 kcal. In terms of the Western-style breakfast, not only was NRF 9 lower but also NRF 3 was higher. Its energy content was also the lowest level at 241.59 kcal. On the other hand, the percentage of macronutrients from energy in the Western-style breakfast was within the recommended range (%65, carbohydrate, %21 lipid and %14 protein).

Discussion and Implications

Breakfast is thought of as the meal that provides the most performance and productivity over a prolonged period of hunger caused by the longest sleep of the day. Our health, well-being, and cognitive function are affected by the food and beverages we choose to consume first in the morning (Betts et al., 2016; Spence, 2017). For this reason, breakfast is considered the basis of nutrition for the whole day (O'Neil, Byrd-Bredbenner, et al., 2014).

The highest NRF9.3 score was English breakfast (42.59) > Turkish breakfast (36.15) > Spanish breakfast (31.16) > French breakfast (25.49) > Western-style breakfast (11.37). English breakfast had more protein, fiber, iron, magnesium, potassium because of beans. Although the Turkish breakfast had high protein content and moderate calcium, magnesium and potassium contents, NRF 3 was also elevated due to the use of butter and honey. The high NRF score observed for the Turkish breakfast reflects its traditional composition, which includes a diverse array of nutrient-dense ingredients such as fresh vegetables, cheeses, and egg. These elements contribute significantly to micronutrient intake relative to their energy content. Similarly, the comparatively higher NRF score for the English breakfast can be attributed to its balanced inclusion of mushrooms and beans and dairy products, which collectively enhance its overall nutrient density. Likewise, Spanish breakfast had moderate protein, calcium, magnesium and potassium contents, and the saturated fatty acid content was relatively high due to the use of cow milk and cheese, which also contributed to a higher NRF9 and NRF3 score. If dairy products are semi-skimmed milk and/or low-fat cheese, the NRF score of Spanish breakfast will be improved. Moreover, the content of tostada can be enriched with vegetables. In fact, while the French breakfast did not have a high NRF 3, the NRF 9 was also the lowest among countries because it had the lowest protein content - — stemming from having only one egg as its sole protein source. Our findings suggest that if protein-rich foods such as additional eggs or cheese were incorporated, or if components like tostada were enriched with vegetables, the overall NRF score of the French breakfast could be significantly improved. This detailed evaluation highlights how modifying specific meal components can enhance nutrient density, offering valuable insights into potential strategies for improving breakfast quality. In terms of Western-style breakfast, not only was NRF 9 lower but also NRF 3 was higher. However, the percentage of macronutrients from energy in the Western-style breakfast was suggesting a balanced profile despite the lower overall nutrient density.

Therefore, it seems that Western-style breakfast had higher saturated fat and sugar and lower fiber, iron, magnesium, potassium. These nuances highlight that while energy content and composite scores such as NRF 9.3 provide valuable insights, a detailed evaluation of the contributions from specific food groups is essential to fully understand the nutritional quality and health implications of diverse breakfast patterns. The breakfast cereals had more carbohydrates, especially added sugar, and the milk was considered whole milk. If the whole-fat milk changes semi-fat or light milk and breakfast cereal is chosen free-sugar and fortified with fiber, vitamins, minerals, the NRF9.2 score of the Western-style breakfast can be improved.

The variety of Turkish breakfasts stems from a long history of agriculture and cooking, and often include a number of minor dishes (such as cheeses, olives, and fresh vegetables) that add to their diverse nutritional profile. Likewise, the very high protein level of the British breakfast can be attributed to historical and cultural factors, including hardworking lifestyles and a long-standing custom of consuming eggs and meat-based foods (such as bacon and sausages). In the instance of France, preferring lighter morning meals—historically consisting of bread, butter, jam, and coffee—led to the creation of the country's more straightforward, pastry-focused breakfast custom, which reflects cultural customs of little morning food preparation. However, because of the nation's agricultural wealth and culinary traditions, Spanish breakfasts frequently include Mediterranean ingredients like olive oil, tomatoes, and cheese, which can raise the protein profile. By incorporating these sociocultural factors, we offer a more thorough comprehension of how regional customs and cultural backgrounds influence the nutritional density and content of breakfast meals across nations. However, there is not such a similar study related to nutritional density and content of breakfast meals. We, therefore, tried to discuss breakfast habits and focus which foods in breakfast people consumed.

According to Türkiye Nutrition and Health Survey (TNHS) 2019, 67.9% of people in Türkiye consume 3 main meals. A total of 25.8% consumed 2 meals and 6.3% consumed 1 meal or no meals at all. TNHS data show that 14.2% of the Turkish population skips breakfast (TNHS, 2019). A study involving 1200 students in the Marmara Region reported that 73% of the students ate breakfast, whereas 27% did not eat breakfast regularly. In addition, the habit of having irregular breakfast is most common in students who stay in student houses, whereas the habit of having regular breakfast is most common in students who stay in state dormitories/hostels (Özkaya, 2021). Unfortunately, skipping breakfast is associated with some health complaints (Kurtgil, 2023). A follow-up study was conducted to examine the effects of breakfast consumption on the growth and development of Turkish students aged 6-15 years. As a result of this study, it was concluded that breakfast is important in terms of meeting daily nutrient and energy needs and is important for physical growth (Özkeçeci et al., 2021). When Turkish breakfast culture and breakfast habits are examined, it is noteworthy that Turkish breakfast is diverse and shows local characteristics according to region. In studies on breakfast habits, the breakfast habits of Turks are not sufficient. A survey conducted by YouGov, a UK-based and online-based survey company, in 2017 on what foods the ideal full English breakfast should contain, revealed that the most important element of a full English breakfast is bacon, and 89% of British people say that bacon is included in an ideal full English breakfast plate. Following bacon, the most preferred foods were sausages (82%), toast (73%), beans (71%), fried eggs (65%) and french fries (60%) (Smith, 2017). However, British people do not typically consume a full English breakfast every day. It is often common to choose simple and quick-to-prepare alternatives such as porridge, toast, fruit juice, tea, coffee or cereal (Wright, 2011). After all, their interactions with past civilizations have contributed significantly to the development of British cuisine. Although

today's preference for foods suitable for quick consumption makes the country's cuisine seem weak, British cuisine has an important place in the world because of its unique culinary traditions, especially the full English breakfast.

On the other hand, French children and adults in all age groups consume regularly breakfast (Lepicard et al., 2017; Bellisle et al., 2018). More than 90% of all age groups consume it at home (Bellisle et al., 2018). However, French breakfast products are rich in carbohydrates and simple sugars. Breakfast in France contributes significantly to nutritional quality but could be improved in terms of fiber and protein content (Bellisle et al., 2018). Approximately 60% of adults currently eat a cup of coffee or tea, some bread with butter and/or jam, a croissant, or something similar to breakfast. Despite dietary guidelines, only 10% of people are seen to eat cheese and fruit with bread or cereal, with young, educated, wealthy households making up the majority of this consumption. On the other hand, 14.1% merely drink, whereas 17.5% consume deli meats, eggs, or fish. In addition to bread, children are given hot milk, hot chocolate, or cereal (Grignon, 2009). In individuals with poor diet quality, breakfast can be improved by consuming protein-rich foods (milk, fresh dairy products, cheese, or other) and consuming less added sugar (Bellisle et al., 2018).

Similarly, studies have shown that Spanish people generally tend to eat breakfast (Aranceta, 2001; Ruiz et al., 2018). A study by Ruiz et al. (Ruiz et al., 2018) of 2285 people aged 9-75 years revealed that most of the Spanish population makes breakfast regularly, but one-fifth of adolescents skip breakfast. The Anthropometry, Intake, and Energy Balance Study in Spain, which involved 1655 adult Spanish people, revealed that the majority of them routinely ate breakfast, whereas 3.6% of adults skipped breakfast (Navia, 2017). Similarly, one cross-sectional study with a random sample of the Spanish population over 3 years of age (n = 6,800) reported that 94.8% of participants regularly consumed breakfast. Breakfast consists of milk (77% of consumers), coffee (55%), bread (45%), oil (16%), tomatoes (6.7%), butter (11.4%), margarine (3%) and/or jam (9.5%). Alternatively, cookies (26 percent), pastries (16 percent) or breakfast cereals (14.4 percent) are preferred. It usually contains 9.5% fruit. However, only 4.4 percent of men and 4.7 percent of women have an adequate breakfast consisting of dairy products, cereals and fruit. All age groups should be encouraged to eat more fruit at breakfast and to prioritize eating meals from the grain group, which includes whole grains, less refined products, and items with lower added salt, sugar, and fat contents (Pérez-Rodrigo, 2017).

The health experts' overall recommendation is to have a hearty, well-balanced breakfast that releases energy gradually throughout the morning. In this context, a well-balanced breakfast with protein and high fiber provides a slower and more sustained supply of energy than does a low-fiber high-glycemic ready-to-eat cereal. A recent study suggested that approximately 15-25% of total daily energy intake should come from breakfast (Spence, 2017). Another study indicated that an ideal breakfast should provide a balanced daily energy intake of 20-35% and should include a choice of three food groups, including milk and milk derivatives (low fat), cereals (preferably whole grain, unrefined) and fruit (fresh fruit or natural fruit juices, without added sugar) (Giovannini et al., 2008). A recent study conducted in a UK population investigated food and food group intakes at breakfast and examined associations with diet quality and reported that breakfast contributes 20-22% to total daily energy intake. Additionally, carbohydrate and nondairy extrinsic sugar intakes were found to be higher than other meals, and protein, total fat and saturated fatty acid intakes were found to be lower than daily reference intake levels. In addition, breakfast meals are especially rich in B vitamins, vitamin D, calcium, iron, iodine and magnesium (Gaal et al., 2018). The energy content of typical breakfast meals of the countries evaluated in this study ranged between 269 and 846 kcal, whereas breakfast cereal

with milk contained 241 kcal of energy. On the other hand, a standardized breakfast model that defines specific food groups or types was considered impractical. This is because, in a changing world, eating habits can change from day to day. Moreover, cost, health goals and cultural traditions, individual tastes and preferences, habits, availability and accessibility also influence food choices. However, combining protein-rich foods at breakfast with nutrient-dense, carbohydrate-rich foods such as cereals, fruits or vegetables, which are necessary to provide the carbohydrates needed to provide energy and replenish glycogen stores after a long fasting period, is generally recommended (O'Neil, Byrd-Bredbenner, et al., 2014). In this context, the percentage of macronutrients in the typical breakfast meals of the countries evaluated in this study varied considerably. The local choices of breakfast foods and the cultural background of breakfast meals clearly vary greatly across countries, which greatly influences the energy and macronutrient contents of breakfast meals. Regarding the assessment of breakfast meals, merely evaluating the proportion of macronutrients on the basis of energy content may prove inadequate. For this reason, it would be useful to publish national guidelines for healthy breakfast ingredients and make recommendations according to the cultures of the countries. Regarding the assessment of breakfast meals, merely evaluating the proportion of macronutrients based on energy content may prove inadequate. For this reason, it would be useful to publish national guidelines for healthy breakfast ingredients and make recommendations according to the cultures of the countries. Although the idea of establishing an international regulation for healthy breakfast has been proposed, it is important to clarify that such an undertaking would not be the responsibility of a single entity. Rather, it would necessitate a collaborative effort involving international health organizations (e.g., the World Health Organization), national governments, and leading nutrition experts. This multi-stakeholder approach would help develop standardized, scientifically robust, and culturally sensitive guidelines that respect local dietary practices while promoting global public health.

The current study offers a novel approach to comparing the nutrient density of traditional and contemporary breakfast meals from an international perspective, utilizing the NRF 9.3 as a key analytical tool. By incorporating a cultural dimension into the analysis, we challenge the existing literature's narrow focus on individual nutrient composition, providing a more holistic view of global breakfast habits. Furthermore, our findings contribute to a better understanding of the relationship between food diversity, cultural identity, and the nutrient density of meals, all of which are essential for advancing research in international nutrition and cross-cultural health studies. The insights gained from this study can be used to inform policy makers, nutritionists, and public health officials in the development of culturally sensitive dietary recommendations that improve the nutritional quality of breakfast meals aligned with national and regional preferences. By recognizing the importance of local food traditions, our study encourages more personalized approaches to dietary counseling that respect cultural diversity while promoting improved health outcomes. Additionally, our findings provide a basis for future development of educational campaigns aimed at improving breakfast consumption patterns and addressing public health concerns in specific regions.

Future Perspectives

From past to present, breakfast cultures and eating habits have undergone significant changes. However, there is a significant gap in the literature on this subject and breakfast cultures need to be thoroughly researched and preserved. Although breakfast has historically been associated more with food science than with gastronomy, there are indications that this divide may be beginning to blur (Spence, 2017). For example, Van Breakfast received a

Geographical Indication Registration Certificate because of its reputation for being natural and capturing the essence of the city. Van Breakfast; Van's Herby Cheese, Murtuğa, and Van Kavut include a variety of foods prepared with clotted cream, butter, honey, rose jam, cacık and eggs (Türkpatent, 2018). In particular, a detailed examination of traditional breakfast habits in different countries can contribute to our understanding of the relationship between nutrition and cultural identities. In this context, it is important for future research to examine the cultural and nutritional sustainability and health effects of breakfast more deeply. This study is promising because it highlights the health and sociocultural dimensions of the breakfast cultures of different countries. In addition, in our study, we provide a comprehensive evaluation of cultural and nutritional aspects by performing nutritional evaluations of the breakfasts of these different countries. Future studies could expand the comparison of breakfast habits across a wider range of countries and regions, focusing not only on the nutritional content, but also examining how local traditions and socio-economic factors influence breakfast practices. This would provide a more thorough comprehension of how culture and nutrition interact. Moreover, research should investigate how breakfast consumption and its nutritional quality vary across age groups, from children to the elderly, and how these variations affect health outcomes. Additionally, conducting further studies on breakfast habits and meal nutrient density in other geographies, especially in underrepresented regions such as Africa, Asia, and Latin America, would help fill gaps in this line of research.

Declaration

All authors of the article contributed equally to the article process. The authors have no conflicts of interest to declare.

REFERENCES

Akyürek, S. (2018). Investigation of similarities and differences of Turkish and Spanish cuisine cultures. *Electronic Turkish Studies*, 13(2).

Aranceta, J., Serra-Majem, L., Ribas, L., Pérez-Rodrigo, C. (2001). Breakfast consumption in Spanish children and young people. *Public Health Nutrition*, 4(6a), 1439-1444.

Bartrina, A., Rodrigo, P., Majem, S., Rubio, D. (2004). Food habits of students using school dining rooms in Spain." Tell Me How You Eat" Study. *Atencion Primaria*, 33(3), 131-139.

Batista-Jorge, G. C., Barcala-Jorge, A. S., Oliveira Dias, A. F., Silveira, M. F., de Farias Lelis, D., Oliveira Andrade, J. M., Claro, R. M., de Paula, A. M. B., Guimaraes, A. L. S., & Ferreira, A. V. (2016). Nutritional status associated to skipping breakfast in Brazilian health service patients. *Annals of Nutrition and Metabolism*, 69(1), 31-40.

Baztán, M. R. (2021). Potatoes and nation-building: The case of the Spanish omelette. *Journal of Iberian and Latin American Studies*, 27(2), 151-170.

Bellisle, F., Hébel, P., Salmon-Legagneur, A., & Vieux, F. (2018). Breakfast consumption in French children, adolescents, and adults: A nationally representative cross-sectional survey examined in the context of the International Breakfast Research Initiative. *Nutrients*, 10(8), 1056.

Betts, J. A., Chowdhury, E. A., Gonzalez, J. T., Richardson, J. D., Tsintzas, K., & Thompson, D. (2016). Is breakfast

the most important meal of the day? *Proceedings of the Nutrition Society*, 75(4), 464-474.

Bule, G. (2018). The Traditional Full English Breakfast. The English Breakfast Society. https://englishbreakfastsociety.com/full-english-breakfast

Clutter, A. W., & Nieto, R. D. (2009). Understanding the Hispanic culture. Ohio State University Fact Sheet: Family and Consumer Sciences.

Coxall, M. (2018). Traditional Baking Recipes of Spain. Cornelio Books.

Çakıcı, A. C., & Seçkin, E. (2016). Yabancı mutfak şefleri gözüyle Türk mutfağına ilişkin bir değerlendirme. *Journal of Tourism & Gastronomy Studies*, 4(Special Issue 1), 215-227.

Çekal, N., & Aslan, B. (2017). Gastronomik bir değer olarak tarhana ve coğrafi işaretlemede tarhananın yeri ve önemi. *Güncel Turizm Araştırmaları Dergisi*, 1(2), 124-135.

Çekal, N., & Doğan, E. (2021). Türk ve dünya mutfaklarında kahvaltı üzerine bir çalışma. *Humanities Sciences*, 16(1), 71-88.

Delley, M., & Brunner, T. A. (2019). Breakfast eating patterns and drivers of a healthy breakfast composition. *Appetite*, 137, 90-98.

Deshmukh-Taskar, P., Nicklas, T. A., Radcliffe, J. D., O'Neil, C. E., & Liu, Y. (2013). The relationship of breakfast skipping and type of breakfast consumed with overweight/obesity, abdominal obesity, other cardiometabolic risk factors and the metabolic syndrome in young adults. The National Health and Nutrition Examination Survey (NHANES): 1999–2006. *Public Health Nutrition*, 16(11), 2073-2082.

Drewnowski, A. (2009). Defining nutrient density: Development and validation of the nutrient rich foods index. *Journal of the American College of Nutrition*, 28(4), 421S-426S.

EFSA. (2009). European Food Safety Authority. Review of labelling reference intake values-Scientific Opinion of the Panel on Dietetic Products, Nutrition and Allergies on a request from the Commission related to the review of labelling reference intake values for selected nutritional elements. *EFSA* J. 7:1008. doi: 10.2903/j.efsa.20 09.1008.

FDA. (2020). Food and Drugs Chapter I --Food and Drug Administration Department of Health and Human Services Subchapter B - Food for Human Consumption. https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=101.9.

Gaal, S., Kerr, M. A., Ward, M., McNulty, H., & Livingstone, M. B. E. (2018). Breakfast consumption in the UK: patterns, nutrient intake and diet quality. A study from the international breakfast research initiative group. *Nutrients*, 10(8), 999.

Gheorghe, G., & Bulin, D. (2014). Cuisine-a regional tourism differentiation tool. Knowledge Horizons. *Economics*, 6(2), 194.

Gibney, M. J., Barr, S. I., Bellisle, F., Drewnowski, A., Fagt, S., Livingstone, B., Masset, G., Varela Moreiras, G., Moreno, L. A., Smith, J., Vieux, F., Thielecke, F., & Hopkins, S. (2018). Breakfast in Human Nutrition: The International Breakfast Research Initiative. *Nutrients*, 10(5), 559. https://www.mdpi.com/2072-6643/10/5/559

Giovannini, M., Verduci, E., Scaglioni, S., Salvatici, E., Bonza, M., Riva, E., & Agostoni, C. (2008). Breakfast: a good habit, not a repetitive custom. *Journal of International Medical Research*, 36(4), 613-624.

Grignon, C. (2009). French meals. In *Meals in Science and Practice* (pp. 343-358). Elsevier.

Hess, J. M., & Slavin, J. L. (2017). Healthy snacks: Using nutrient profiling to evaluate the nutrient-density of common snacks in the United States. *Journal of food science*, 82(9), 2213-2220.

Hope, A. (2011). *Londoners' Larder: English Cuisine from Chaucer to the Present. Random House*. Mainstream Publishing.

Iqbal, K., Schwingshackl, L., Gottschald, M., Knüppel, S., Stelmach-Mardas, M., Aleksandrova, K., & Boeing, H. (2017). Breakfast quality and cardiometabolic risk profiles in an upper middle-aged German population. *European Journal of Clinical Nutrition*, 71(11), 1312-1320.

Julien-David, D., & Marcic, C. (2020). Food, nutrition and health in France. In *Nutritional and Health Aspects of Food in Western Europe* (pp. 109-131). Elsevier.

Kilic, B. (2009). Current trends in traditional Turkish meat products and cuisine. *LWT-Food Science and Technology*, 42(10), 1581-1589.

Kubota, Y., Iso, H., Sawada, N., Tsugane, S., & Group, J. S. (2016). Association of breakfast intake with incident stroke and coronary heart disease: The Japan Public Health Center–Based Study. *Stroke*, 47(2), 477-481.

Kurt, G., & Dłużewska, A. (2018). Gastro tourism potential and perspectives for Turkey–a theoretical approach.

Kurtgil, S. (2023). Determination of breakfast habits, food pattern and quality among adults. *Mediterranean Journal of Nutrition and Metabolism* (Preprint), 1-11.

Kuwahara, M., Tahara, Y., Suiko, T., Nagamori, Y., & Shibata, S. (2022). Effects of Differences of Breakfast Styles, Such as Japanese and Western Breakfasts, on Eating Habits. *Nutrients*, 14(23), 5143. https://doi.org/10.3390/nu14235143

Lepicard, E., Maillot, M., Vieux, F., Viltard, M., & Bonnet, F. (2017). Quantitative and qualitative analysis of breakfast nutritional composition in French schoolchildren aged 9–11 years. *Journal of Human Nutrition and Dietetics*, 30(2), 151-158.

Lopez-Diaz, T. M., Alonso, C., Santos, J., Garcia, M. L., Moreno, B. (1995). Microbiological changes during manufacture and ripening of a naturally ripened blue cheese (Valdeon, Spain). *Milchwissenschaft* (Germany), 50(7).

Martínez, S., Franco, I., Carballo, J. (2011). Spanish goat and sheep milk cheeses. *Small Ruminant Research*, 101(1-3), 41-54.

Medina, F. X. (2005). *Food Culture in Spain*. Bloomsbury Publishing

Méndez, C. D. (2014). Food and Social Change: Signs of Change in Spanish Eating Habits. *Italian Sociological Review*, 4(2), 207.

Moolwong, J. (2020). Production of pumpkin churros. In international academic multidisciplinary research

conference in Rome 2020, 34-41.

Morales, F. J., & Arribas-Lorenzo, G. (2008). The formation of potentially harmful compounds in churros, a Spanish fried-dough pastry, as influenced by deep frying conditions. *Food Chemistry*, 109(2), 421-425.

Mullan, B. A., & Singh, M. (2010). A systematic review of the quality, content, and context of breakfast consumption. *Nutrition & Food Science*, 40(1), 81-114.

Navia B., L.-S. A. M., Villalobos T., Aranceta-Bartrina J., Gil Á., González-Gross M., et al. (2017). Breakfast habits and differences regarding abdominal obesity in a cross-sectional study in Spanish adults: The ANIBES study. *PLoS ONE*, 12(11), e0188828. https://doi.org/https://doi.org/10.1371/journal.pone.0188828

NNR. (2014). Nordic Council of Ministers. Nordic Nutrition Recommendations 2012: Integrating Nutrition and Physical Activity. Copenhagen K: Nordic Council of Ministers.

O'Neil, C. E., Byrd-Bredbenner, C., Hayes, D., Jana, L., Klinger, S. E., & Stephenson-Martin, S. (2014). The role of breakfast in health: Definition and criteria for a quality breakfast.

O'Neil, C. E., Nicklas, T. A., & Fulgoni III, V. L. (2014). Nutrient intake, diet quality, and weight/adiposity parameters in breakfast patterns compared with no breakfast in adults: National Health and Nutrition Examination Survey 2001-2008. *Journal of the Academy of Nutrition and Dietetics*, 114(12), S27-S43.

O'Connor, K. (2009). Cuisine, nationality and the making of a national meal: The English breakfast. In *Nations and their histories: Constructions and representations* (pp. 157-171). Springer.

Ozden, B. (2020). Changes in the Breakfast Traditions of an old World Country: How the Breakfast Traditions in Turkey Have Changed Causing the Loss of an Important Food Culture. *Dublin Gastronomy Symposium*. https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1178&context=dgs

Özkaya, İ. (2021). Determination breakfast habits of university students according to where they live. *Nutr Clín Diet Hosp*, 41(2), 67-71. https://doi.org/ 10.12873/412ozkaya

Özkeçeci, C. F., Balamtekin, N., Ekici, E. M., & Ünay, B. (2021). The effects of daily breakfast consumption on growth in Turkish students. *Kocatepe Tıp Dergisi*, 22(5), 348-354.

Pérez-Rodrigo, C., Ramos-Carrera, N., Lázaro-Masedo, S., Aranceta-Bartrina, J. (2017). Desayuno, rendimiento y equilibrio alimentario:¿ cómo desayunan los españoles? *Revista Española de Nutrición Comunitaria*, 5-12.

Preziosi, P., Galan, P., Deheeger, M. l., Yacoub, N., Drewnowski, A., & Hercberg, S. (1999). Breakfast type, daily nutrient intakes and vitamin and mineral status of French children, adolescents and adults. *Journal of the American College of Nutrition*, 18(2), 171-178.

Rector-Cavagnaro, T. (2009). Tortilla Espanola. *Moebius*, 7(1), 33.

Ruiz, E., Ávila, J. M., Valero, T., Rodriguez, P., & Varela-Moreiras, G. (2018). Breakfast consumption in Spain: patterns, nutrient intake and quality. Findings from the ANIBES study, a study from the international breakfast research initiative. *Nutrients*, 10(9), 1324.

Say, D., Esen, M. K., & Güzeler, N. (2018). *Türk Mutfağında Kahvaltı Kültürü*.

Smith, M. (2017). Bacon is the most important part of a Full English Breakfast. *YouGov*. https://yougov.co.uk/society/articles/17453-bacon-most-important-part-full-english-breakfast

Spence, C. (2017). Breakfast: The most important meal of the day? *International Journal of Gastronomy and Food Science*, 8, 1-6. https://doi.org/http://dx.doi.org/10.1016/j.ijgfs.2017.01.003

Streppel, M., Sluik, D., Van Yperen, J., Geelen, A., Hofman, A., Franco, O., Witteman, J., & Feskens, E. (2014). Nutrient-rich foods, cardiovascular diseases and all-cause mortality: the Rotterdam study. *European Journal of Clinical Nutrition*, 68(6), 741-747.

Şen, M. A. (2020). Gastronomi Turizmi Kapsaminda Trabzon Mutfağına Özgü Bir Ürün "Kuymak". *Karadeniz İncelemeleri Dergisi*, 15(29), 251-268.

TNHS. (2019). Republic of Türkiye Ministry of Health General Director of Public Health. Türkiye Nutrition and Health Survey 2019 (TNHS 2019); Tiraj Basım ve Yayın Sanayi Ticaret Ltd. Şti.: Ankara, Türkiye, 2019; ISBN 978-975-590-722-2.

Türkpatent. (2018). Geographical Indications. *Türk Patent ve Marka Kurumu*. https://ci.turkpatent.gov.tr/cografi-isaretler/detay/38658

UNESCO. (2010). Gastronomic meal of the French. https://ich.unesco.org/en/RL/gastronomic-meal-of-the-french-00437

UNWTO. (2012). Global report on food tourism. The World Tourism Organization (UNWTO). https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2019-09/food_tourism_ok.pdf

USDA. (2023). USDA National Nutrient Database FoodData Central. https://fdc.nal.usda.gov/

Uzhova, I., Fuster, V., Fernández-Ortiz, A., Ordovás, J. M., Sanz, J., Fernández-Friera, L., López-Melgar, B., Mendiguren, J. M., Ibáñez, B., & Bueno, H. (2017). The importance of breakfast in atherosclerosis disease: insights from the PESA study. *Journal of the American College of Cardiology*, 70(15), 1833-1842.

Vretlund Lust, H. (2013). Los españoles desayunan churros en las plazas. Un análisis de las representaciones de los hábitos alimenticios españoles en dos manuales escolares y un programa de radio de E/LE en Suecia. Gothenburg Universty library.

Waldee, L. M. (2002). *Cooking the French Way*. Lerner Publications.

Williams, V. R. (2024). *Food Cultures of Great Britain: Cuisine, Customs, and Issues*. Bloomsbury Publishing USA.

Wright, C. D. (2011). *A history of English Food*. Random House.

Yoo, K.-B., Suh, H.-J., Lee, M., Kim, J.-H., Kwon, J. A., & Park, E.-C. (2014). Breakfast eating patterns and the metabolic syndrome: The Korea National Health and Nutrition Examination Survey (KNHANES) 2007-2009. *Asia Pacific Journal of Clinical Nutrition*, 23(1), 128-137.