

FOOD AS MEDICINE: THE HEALING POWER OF SUGAR IN OTTOMAN
MEDICAL MANUSCRIPTS DURING THE 14TH AND 15TH CENTURIES

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To my parents.

ABSTRACT

This thesis intends to explore how people perceived intertwined relationships between food and health in the Ottoman Empire during the early modern era with a particular focus on sugar. Sugarcane which originated from Southeast Asia reached the eastern Mediterranean region in the 7th century. Produced in a long and arduous process, sugar obtained from sugar cane became an object of desire and a status indicator in medieval Arab, European and Ottoman worlds. Sugar was used for multiple practical purposes, including medicinal use. The thesis explores the role of sugar in the Ottoman health system within the framework of humoral theory by examining four Ottoman medical manuscripts from the 14th and 15th centuries. According to the medical manuscripts sugar was considered hot and moist. Different types of sugar such as white sugar, solid white sugar (*tabar zad*) was used to expel phlegm from the body and to relieve cough. There are also sweets in which it is recommended to use sugar for its benefits. The thesis findings show that being a rare and valuable commodity sugar besides its cultural and symbolic meanings, played an essential role as a medicine in the Ottoman health system based on humoral theory. Moreover, the information obtained from the Ottoman medical manuscripts coincides with the use of sugar in the European medical understanding of the period.

Keywords: Sugar, Sweet, Cookbooks, Ottoman Food History, Ottoman Medical Manuscripts, History of Medicine, Humoral theory

ÖZET

Bu tez, şekere odaklanarak, erken modern çağda Osmanlı İmparatorluğu'nda insanların gıda ve sağlık arasındaki iç içe geçmiş ilişkileri nasıl algıladıklarını keşfetmeyi amaçlamaktadır. Güneydoğu Asya'dan gelen şeker kamışı, 7. yüzyılda Doğu Akdeniz bölgesine ulaştı. Uzun ve meşakkatli bir süreçte üretilen şeker kamışından elde edilen şeker, ortaçağ Arap, Avrupa ve Osmanlı dünyasında bir arzu nesnesi ve statü göstergesi haline geldi. Şeker, tıbbi kullanım da dahil olmak üzere birçok pratik amaç için kullanıldı. Bu tez, 14. ve 15. yüzyıllara ait dört Osmanlı tıp yazmasını inceleyerek, humoral teori çerçevesinde şekerin Osmanlı sağlık sistemindeki rolünü araştırıyor. Tıp yazmalarına göre şeker sıcak ve nemlidir. Beyaz şeker, katı beyaz şeker (tabar zad) gibi farklı şeker türleri balgamı vücuttan atmak ve öksürüğü gidermek için kullanılır. Ayrıca faydaları için şeker kullanılması tavsiye edilen tatlılar da vardır. Şeker, hastalıkları iyileştirmek ve sağlığı dengelemek için kullanılıyordu. Hastanın mizacına göre şeker veya bal ile tarif hazırlanabilir. Tez bulguları, kültürel ve sembolik anlamlarının yanı sıra ender ve değerli bir meta olan şekerin humoral teoriye dayalı Osmanlı sağlık sisteminde bir ilaç olarak önemli bir rol oynadığını gösteriyor. Şekeri tıbbi amaçlar için etkili bir şekilde kullanılıyordu. Ayrıca Osmanlı tıp yazmalarından elde edilen bilgiler, dönemin Avrupa tıp anlayışında şeker kullanımı ile örtüşmektedir.

Anahtar Kelimeler: Şeker, Tatlı, Yemek Kitapları, Osmanlı Yemek Tarihi, Osmanlı Tıp Yazmaları, Tıp Tarihi, Humoral Teori

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CHAPTER 1

INTRODUCTION

1.1 The Aim and the Scope of the Study

"This world is a war zone. Fasting, avoiding unhealthy foods, and doing what is necessary is like putting on solid armor." *Hazâinü's-Saâdât* by Eşref Bin Muhammed

The above-mentioned quotation from *Hazâinü's-Saâdât*, a medical manuscript written during the first half of the 15th century written by Eşref Bin Muhammed, symbolizes the intertwined relationship between food and health in Ottoman medicine, which was dictated by the humoral theory. According to this understanding, dietary regimes constitute the major factor that can regulate the health and the food which was essentially a source of healing with therapeutic properties. As the relevant literature implies dietary practices and medical applications were perceived as inseparable from each other as they were embedded in the Ottoman medicinal culture. All kinds of foodstuffs such as meat, bread, water, rice, fat, vegetables, fruits, sugar, spices have different properties and are differentiated from each other according to this medical understanding. Sugar, which is enumerated among these food items, is a rare and expensive ingredient and, contrary to today's nutrition understanding, it is a food that has medical benefit, and it is not harmful.

Sugar had a particular place in people's lives in the early modern world as it was in the Ottoman Empire. People were using sugar for a variety of purposes: they were using it in cooking, in the medical preparation or they were giving it just as a gift. So, sugar has a great importance in life. During my undergraduate studies, the

courses I took on the history of Istanbul, the articles I read about the agricultural practices, gardens, and orchards of Istanbul throughout its history, and the classroom discussions prompted me to consider the role of products and plants in Ottoman history. Then, when I read Sidney W. Mintz's work *Sweetness and Power*, I was very influenced with the power of a very ordinary commodity in human history. The silent but deep history of sugar depicted in a very complicated way in Mintz's research inspired me to start my current master's program. I became curious about the history of sugar in the Ottoman Empire. The food culture and history course I took in my graduate program taught me how many plants, fruits, and vegetables can change everything over time, from the labor system to the daily diet. Plants could guide us in understanding the stories of ordinary people. Furthermore, the social theory of science and technology course, taught me the importance of reflecting on the agency of non-human actors and analyzing emerging networks of connections. So, my curiosity about the history of sugar flourished within the framework of my master's program.

Exploring the place and history of sugar in the Ottoman culture initiated firstly this research. The intersection of medicine and cuisine in the Ottoman culture constitutes the second source of inspiration in it. Thus, to discover and explore the meaning of sugar in the early Ottoman culture, this thesis focusses on the medicinal aspects of sugar. The meaning of sugar in the traditional Ottoman medical literature and its uses in relation to health constitute the main subject. By exploring the use of sugar in Ottoman medicine through the Ottoman medical manuscripts of the 14th and 15th centuries, one would get a better insight into how people perceived this product, made it, used it, and tried to be cured by using it. Another layer of this product's

intertwined relationship with health purposes was being closely related to the humoral theory. For this purpose, several research questions regarding the relationship between sugar and its medicinal use present in this thesis a ground for further discussion. Did the perception of sugar in humoral theory corpus and its reflection and usage in Ottoman medical practices show parallelism with each other? Was there a recommendation by physicians to use sugar in the preparation of specific food types? The nature of sugar is considered hot and moist in humoral theory. So, what did it mean for sugar to be considered hot and moist in humoral theory? What kind of a relationship is there between these properties attributed to sugar and its usage areas?

By exploring the history of sugar in Ottoman medical literature in the 14th and 15th centuries, this thesis aims to contribute to the food history literature in the Ottoman empire. As it is known the research on a particular commodity has an essential place in the history of food. The most significant contribution of such studies to the field is undoubtedly that they allow a commodity to be examined in depth; because of these in-depth analyses, details that were previously overlooked also come to light. It is the same with sugar. In this thesis, I tried to show the similarities between the types of sugar used in that period, the medical position and perception of sugar, and the cookbooks of the period by looking at the medical use of sugar between certain centuries. An analysis of this well-linked relation between food and health in Ottoman medicine may provide a better and more holistic understanding of people's daily practices and their perceptions of food and health.

This thesis focuses on the medicinal uses of sugar in pre- and early modern Ottoman medical texts. Regarding food history, since there are numerous mentions

of food items, medical texts from the pre-modern and early modern periods are precious sources of information. These texts help us to understand the animals and plants native to the geographical region to which they belong. In addition to this, it explains the fundamental ideas behind the humoral theory and how a person's diet ought to be structured in accordance with these ideas. The recipes prepared by physicians for the treatment of various diseases, considering the person's temperament, can also explain the perspective of the period toward perceptions of food and its multiple connections with human well-being. Therefore, the selected texts used in the thesis provide information about the varieties of sugar and the various diseases that sugar is used to treat. Focusing on a particular commodity, its production and consumption patterns, cultural dimensions, and specifically the medicinal purposes, this thesis intends to explore sugar's various roles in the early modern Ottoman Empire.

The thesis consists of five chapters. Following the aim and the scope of the thesis the first chapter will portray very briefly the literature in food historiography that was emerged after the second half of the 20th century with a particular focus on the history of sugar. The historiographical approach, inspired by the Annales school, perceives food as a part of civilization and states that analyzing food related events and processes will shed light on many questions about the history of humanity. This historiographical approach also inspired Ottoman-Turkish food historiography. Sugar was historically an important product that intrinsically connected with different people's lives at different levels and contexts. Therefore, various questions related to sugar led historians to examine different aspects of people's social, economic,

cultural, and medicinal experiences. Thus, this chapter also examines the literature that focuses on sugar's place in food history.

To have a broader perspective related to sugar and its place in the Ottoman Empire, the second chapter of the thesis will focus on several themes, including a short history of sugar, various production methods of sugar cane, different types of sugar, production, and consumption process of sugar in the Ottoman Empire. After people brought sugar from Southeast Asia to India, the Middle East, and Europe, this product played a variety of pivotal roles in the lives of the Ottoman people. As a quite valuable product, mostly wealthy people were able to reach sugar and use it for multiple purposes. Among them, people used sugar for cooking, gave it as a gift, and showed it in ceremonies as sculptures. Due to its high value, sugar had a symbolic meaning, and it also showed the high social status of its users.

In the third chapter, sugar will be analyzed within the framework of humoral theory. As a way of understanding complex and multilayered links between human health and food, the humoral theory had been a prominent health understanding for centuries. In the Ottoman world, this theory also played a crucial role in understanding how people perceived their bodies, health, and bodily balance for good health. Furthermore, in this chapter, while discussing the issue of medical uses of sugar, contemporary sources, like Şirvani's cookbook will also be mentioned. The recipes in the cookbook imply the close connections between sugar and health.

In the fourth chapter, I tried to show comprehensive information on four manuscripts from the 14th and 15th centuries that I used in the thesis, to have insights into health perceptions of the time, and what roles sugar played in these understandings. These texts are *Edviye-i Müfrefe* by İshak bin Murad, *Müntahab-ı*

Şifâ by Hacı Paşa also known Celalüddin Hızır bin Aliyü'l Hattab, *Hazâinü's-Saâdât* by Eşref Bin Muhammed, and *Yâdigar* by Ibn-i Şerif. In this chapter these texts are examined in detail, and their peculiarities and distinctions are emphasized to show their specific characteristics. For example, these manuscripts refer to different types of sugars and their special medicinal purposes.

Finally, the fifth chapter discusses how sugar was used in medical texts to cure the diseases. To show these practices, the content of four manuscripts will be compared each other from various angles, including their similarities and differences with Şirvani's cookbook. Thus, this comparative point of view will enable us to understand the imprecise line that define food and medicine. Although I tend to explore a variety of sources to understand the theory of humor in relation to the role of sugar in ancient, medieval, and early modern eras both in the Mediterranean and the European worlds, I should mention that the thesis had some limitations. Regarding the language, even though most of the related literature is available in English, many sources are in French and Arabic. Thus, having broader access to various sources in different languages, such as Arabic and French, will be important for further research in this topic.

Another limitation that made difficult to realize this research is the limited studies realized in the history of sugar in the Ottoman Empire. Even though there are certain comprehensive accounts on the topics related to sugar production and consumption in the Ottoman Empire, the related literature is still limited. Once the literature thrives further, it will be possible to have a more nuanced understanding of the history of sugar in the Ottoman Empire. The various forms of sugar that were discussed throughout the entirety of the thesis are yet another matter that requires

attention. How did the confectioner produce these different kinds of candies? How similar were the production techniques to the production techniques used in the Middle Ages of Islamic world? These are the examples of questions that need to be answered in further studies. Yet besides some of the limitations I faced in this study, I should mention that this thesis will bring novel perspectives and questions in the history of sugar in the Ottoman Empire.

1.2 The Importance of Food in History

Food is an essential component of our daily lives. It influences our lives and cultural identities without our awareness. The study of food and other related topics can provide historians with a diverse and interesting array of topics. Since culinary culture reflects our societies' culture, beliefs, economy, commerce, and politics, culinary culture and history have been inextricably linked.

The interest in the history of food begins to show itself with the influence of the *Annales* School, which emerged at the beginning of the twentieth century. Marc Bloch and Lucien Febvre started to publish the journal of *Annales d'Histoire Économique et Sociale* in 1929. This new thought on history, which would later become known as the Annales school, was founded in opposition to the historical perspective held by the generation that came before it and bring novel perspectives into how historical events were interpreted. This is how Peter Burke briefly summarizes the aims of the Annales school:

In the first place, the substitution of a problem- oriented analytical history for a traditional narrative of events. In the second place, the history of the whole range of human activities in the place of a mainly political history. In the third place- in order to achieve the first two aims- a collaboration with other disciplines: with geography, sociology, psychology, economics, linguistics, social anthropology, and so on (Burke, 1990, p.2).

Sydney Watts asserts that the interest of the Annales school on demographic trends, mentality historiography, and material living conditions is also reflected in food historiography. According to Watts, the Annales school has shaped food historiography in three main points. Focusing on the agricultural production patterns of pre-modern societies and the cognitive frameworks of those societies is the first point. The second point is to investigate the significance of the production and consumption of food for the functioning of the social and economic system. Also, another point is a particular emphasis on the relationship between flavour and identity from a cultural point of view (Watts, 2016, p.2).

Numerical and statistical data were important to Annales Historians. Food was also important in this sense as a part of economic history. The concept of "food" is investigated through subjects such as nutrition and diet, as well as famine, thanks to the influence of the Annales school under the Braudel quantitative hegemony. Nevertheless, some historians believe also that food is also a cultural system. The studies realized by Jean-Louis Flandrin, Maurice Aymard and Françoise Sabban should be mentioned in this context (Watts, 2012).

Flandrin's studies are important at this context (Flandrin, 1999). According to Watts, Flandrin's early studies on sexuality, family, and household are closer to social anthropology than economics. Watts also states that his students and other researchers around him defined food as a cultural system by understanding food's symbolic and intellectual significance. Using medical texts, literary works, and cookbooks, they attempted to explain the various civilizations' food regimes, eating habits, and culinary practices for Watts (Watts, 2012). Therefore, with the fact that he was mainly informed by the Annales school, Flandrin prioritized a qualitative

analysis that intended to explore nuanced ways of food influencing people's social, cultural, and economic worlds. Relatedly, Watts also emphasizes a methodological aspect of the studies on food history: "returning to the cookbook as a primary source for the analysis of food habits and culinary practices" (Watts, 2012, p.14). Thus, once the food itself became a unit of analysis with a qualitative look, it presented an ideal ground to analyze the substantial roles that food-related processes played. As a founding figure for food history, Flandrin's approaches pioneered many historians to delve into a relatively ignored but extremely important facet of history: food and its transformative social roles.

The history of food has been a major research field for various social scientists of different trainings for a couple of decades. In his comprehensive study titled "Cultural Histories of Food," Jeffrey M. Pilcher presents a compelling argument regarding the potential for gaining insights into various aspects such as socioeconomic, cultural, political, and technical shifts and developments through the examination of food networks (Pilcher, 2012). In addition, in his detailed review of the literature on food history, he tries to demonstrate Flandrin's transformative approaches (Pilcher, 2012, p.8,11).

The renewed interest in cultural history in the 1990's was another momentous occasion in food history studies. This food history has also had a significant impact on the academic field. According to Peter Burke, there has been an increase in interest in the three primary aspects of material culture: food, clothes, and household items. According to what he said, economic historians in the past had neglected to consider the symbolic value of these items (Burke, 2004). Pilcher mentions that food is an academic discipline, despite its dominant role in human life, with the

development of new cultural history in the nineties (Pilcher, 2012). He defines cultural history in its simplest form as seeking the meaning of the past by trying to understand how people make sense of the world. According to him, who claims that cooking practices, the circulation of cookbooks, knowledge transfer, and change in taste over time are interconnected, and the shift in culture on an academic basis has also changed the view on cuisine. This is because of the interconnected nature of the three items (Pilcher, 2012, p. 2).

1.3 Ottoman Food History Studies

Ottoman-Turkish food historiography is also not separate from the developments in the world. The influence of the Annales school has been evident in studies of many historians, especially of Fuat Köprülü, since the 1930's (Sönmez, 2008). The influence of the Annales School on food studies in Turkey shows itself firstly in economic historiography. The production, consumption and subsistence processes of food have been of great academic interest in Ottoman historiography for many years. In the forties, Lütfü Güçer deals with the supply of cereals (Güçer, 1948). Likewise, Tevfik Güran, Robert Mantran and many prominent scholars made great contributions to the field (Güran;1984, Mantran;1962). For example, Ömer Lütfü Barkan studied the history of price and the subsistence of Istanbul by examining the palace kitchen registers, foundation charters, and market (*narh*) registers. In recent years, many studies have been carried out on the history of economics (Barkan, 1979). Arif Bilgin's study on Ottoman palace kitchen and organization between the 15th and 17th centuries is important both for ottoman economic and food history studies (Samancı, 2012).

In her article, Özge Samancı points out four trends in Ottoman-Turkish food history studies: First, quantitative based studies within the framework of economic history; secondly folklore studies, thirdly studies in the field of Turcology focusing on the translation and acquisition of cookbooks into Turkish and lastly qualitative food history studies that were a part of cultural history in the footsteps of Flandrin (Samancı, 2012). Samancı contextualizes changing levels and forms of attention to Turkish food history in relation to different variables, such as political motivations, development of tourism, and folklore studies. With the newly established Republic of Turkey, folklore studies gained importance in searching for the ancient origins of the Turks—however, research on cuisine in this context developed in real terms since 1980's. She mentions that with the development of tourism in Turkey, the interest in culinary culture has also increased. Also, she states that in both symposiums organized by The National Folklore Research Foundation, papers were presented on many topics from Central Asia to the Ottoman Empire and the relationship between Turkish food and medicine. The international symposiums of Feyzi Halıcı, an amateur researcher supported by the Ministry of Culture, are also important. World-renowned historians and researchers also participated in the symposiums held regularly from 1985 to 1994. Many topics that were not considered before were also discussed in these symposiums, such as festive meals (Samancı, 2012). In the twenty-first century, interest in Ottoman culinary culture has grown even more. Numerous television programs have debuted.

Since 1990's food history studies with a qualitative approach following Flandrin's approach in food history started in Ottoman- Turkish food historiography. Inspired by Flandrin's approaches, different historians in Turkey focused on food

history through several subjects. Additionally, consumption history studies also gained momentum during these years. For example, Tülay Artan conducted studies on the consumption habits of the Ottoman elite during the 18th century (Artan, 2000). The pioneering work of Suraiya Faroqhi and Christoph K. Neumann titled as “*The Illuminated Table, The Prosperous House*” should be mentioned at this context (Faroqhi, Neumann, 2003). Amy Singer’s “*Starting with Food: Culinary Approaches to Ottoman History*” (Singer, 2011) is another example of the qualitative food history studies in the ottoman studies. Moreover, the studies of Özge Samancı about 19th century Ottoman palace and Istanbul culinary culture reflect the qualitative approach in Ottoman food historiography. She explores the modernization process of the Ottoman Empire in the long 19th century through the changing culinary culture (Samancı, 2015).

It should be mentioned that most of the studies on Ottoman food history focus on the Ottoman palace culinary culture and Istanbul. There are specific reasons for this; since Istanbul was the capital city, the city's food was vital for the administrators, so the minor commodity that came to the city was recorded, and the price balance was also observed. In addition, another feature of being the capital city is that the ruling elite lives in this city, and the written sources left by them are also here. The considerable resource that emerged led researchers to the capital's catering to research the dietary habits of the dynasty members, especially the Sultan and the upper classes. In addition, the observations left behind by local and foreign travellers and ambassadors for Istanbul and its surroundings forced the researchers to stay in this environment again. At this point, some new studies merit to be mentioned because of their different approach. For example Ümit Ekin’s study entitled as “

From Field to the Market: The Consumption of Food Items in Ottoman Provinces”

(Ekin, 2021) focuses mainly on four cities in the Ottoman province. Ekin used fix price registers (*narh*) and inheritance (*tereke*) registers in his study. It is possible to get an idea about the variety of goods, price information, and what was eaten in the Ottoman provinces, where the literature was lacking.

Food, one of the most critical indicators of material culture, has become the subject of many studies, both in its presence and its absence. Zafer Karademir's study examines the food shortages of the late sixteenth and early seventeenth centuries in the Early Modern Ottoman Empire. While doing this, Karademir focuses on the social and economic causes of the famines. He also underlines how the state struggled with the shortage of basic foodstuffs during these periods (Karademir, 2014).

There are some important studies realized about the history of one commodity. For example, Esra Ansel's in her article "*Bureaucrats into Merchants: Tea, Capitalism, and the making of the Republican bourgeois*” focuses on the expansion of the Turkish bourgeoisie in the economic field through the "tea" trade in the late Ottoman and early Republican periods (Ansel, 2023). Also, Uğur Bayraktar's research called "*Salt of the Empire: the making of an Ottoman monopoly, 1838–1881*" is a significant contribution to the Ottoman fiscal history by centering on salt monopoly (Bayraktar, 2023). Research focusing on the history of a particular commodity or food item is considerably limited in Ottoman- Turkish food studies. However, in Western literature, there are various comprehensive accounts that focus on the history of single products, such as sugar, pasta, bread, and coffee. Qualitative

research focusing on a single product from a holistic perspective is of great importance to better understand both Ottoman food history.

1.4 Sugar in Food History

The academic literature on sugar is quite comprehensive. Most of these studies today focus on the dark side of sugar production in the early modern period. Especially starting in the 15th century and continuing onwards, when sugar production moved from the Mediterranean to the Atlantic, and then to South America, there has been comprehensive research on the cultivation of sugar cane using slave labor on plantations. There are multiple studies on the production and consumption of sugar; however, very few studies address the medicinal properties of sugar.

Noël Deerr (1949), Noël Deerr's two-volume work titled *The History of Sugar* is one of the early works on sugar. Sydney Mintz's prominent book *Sweetness and Power: The place of sugar in modern history* (1985) offers a wide-ranging perspective both for sugar studies and for studies on single commodity. In fact, Mintz, who is an anthropologist, went to the Caribbean in the forties and lived in the sugar plantations for a period and observed the consumption of a product during the harvesting process. In his work, Mintz states that while sugar was a luxury product during the Middle Ages, it became an ordinary product around the 19th century and was consumed by the working class. Based on this transformation, he explains the political-economic reasons, such as increasing production by using slave labor in plantations and causing capital accumulation. Mintz explains what a single commodity can change, from dietary habits to production patterns. In the

consumption part of the book, he touches on every point, from the symbolic importance of sugar to its medical use in medieval Europe.

David Waines's in his book entitled *Food Culture and Health in pre-modern Islamic societies* (2011) defines what sugar is in the pre-modern Islamic society, and he also tries to explain the differences in sugar types that emerge because of the refining process, based on the manuscript culture of the period. Mohamed Ouerfelli's book *Le sucre: Production, commercialisation et usages dans la Méditerranée médiévale* (2008) focuses on sugar production in the medieval Mediterranean world, it also examines consumption patterns. According to Ouerfelli, while sugar was primarily known for its medicinal use, over time, it began to take its place in our kitchens as a food product.

Sugar in the Social Life of Medieval Islam (2015) by Sato Tsugitaka is a comprehensive study on single commodity. In this book, Sato delves into the different uses of sugar in the medieval Islamic world. The book explores to what extent the consumption habits of a luxury commodity are included in medicine, literature, entertainment, and cooking. The author explains how a commodity can affect a person's life in many ways.

Petros Bouras-Vallianatos's book titled *Innovation in Byzantine Medicine: The Writings of John Zacharias Aktouarios (c.1275–c.1330)* and his article entitled *Cross-cultural Transfer of Medical Knowledge in the Medieval Mediterranean: The Introduction and Dissemination of Sugar-based Potions from the Islamic World to Byzantium* (2021) are the eye-opening studies examining the medical uses of sugar and sugar-containing mixtures in Byzantine medicine. In his works, he focuses on how Arabic pharmacology influenced Byzantine medical texts in the late Byzantine

period. As a reason for preference, it is stated that the use of sugar in medical fields is simpler and more practical than honey. According to him, sugar improves the product's consistency and fluidity, is available year-round, and has a protective quality. The importance of these studies is that sugar, one of the most critical commodities grown in the Mediterranean world, spread to the surrounding cultures with the development of Arabian spread and pharmacology. The above-mentioned works are at the forefront of studies that specifically examine the medical use of sugar.

Studies about the Ottoman palace food culture and Istanbul also give information about the consumption patterns of sugar in the Ottoman palace cuisine (Samancı, 2015; Bilgin, 2004). For the Ottomans, sugar was one of their favorite ingredients. A considerable amount of sugar was used in desserts in the palace kitchen. However, it was a rare and expensive product used sparingly among the public. Ordinary people preferred honey and molasses instead of sugar in their desserts.

Studies about the production of sugar in the Ottoman Empire exist. For example according to Zafer Karademir's study "*Sugar Production and Consumption in the Ottoman Empire*" explain that sugar production centers called "*şekerhane*" were established during the 15th and 18th centuries, in different regions of the empire. Sugar, which was produced in Cyprus, Egypt, and Damascus, was famous for its quality. However, with the beginning of the development of the sugar industry in Europe in the early 19th century, these centers could not compete anymore with Europe's cheap but high-quality sugar. The Ottoman Empire attempted to establish a sugar factory in the middle of the nineteenth century in *Istanbul, Izmir, and Antalya*.

However, this attempt failed due to a lack of capital and knowledge about the sugar industry (Karademir, 2015).

It should be mentioned that there is no direct literature in the Ottoman culinary history field that discusses sugar's medicinal properties. However, certain information can be found in some books, articles, and dictionaries (Ünver ,1948; Demirhan, 1974). Although Demirhan does not directly refer to sugar, Nuran Yıldırım examines the medical uses of sweets in early Ottoman medical manuscripts (Yıldırım, 2008). Mary Işın's book *Gülbeşeker*, after giving a brief introduction about the history of sugar, explains some sugar types and certain sweets. It does not give sufficient information about its medicinal uses (Işın, 2019). Friedrich Unger's publication titled "*Confectionary in the Orient*" holds significant scholarly value as a primary source on Turkish confectionery. Originally written in German, this work provides valuable insights into the subject matter. Unger arrives in Istanbul in the position of the Chief Confectioner to King Otto I of Greece in the 19th century. In his account, Unger provides insights into the operational methodologies employed by halva makers and confectioners during the initial decades of the nineteenth century. Additionally, he expounds on various confectionery items and classifications of sugar (Çakmak and Işın, 2020).

This study which explores basically the uses of sugar in medical manuscripts during the Ottoman early modern era will contribute to the food history literature about sugar. It will provide further elaboration of the existing literature on the medical uses of sugar in the Ottoman society.

CHAPTER 2

A SHORT HISTORY OF SUGARCANE

2.1 Sugarcane (*Saccharum officinarum* (L))

Sugarcane called *Saccharum officinarum* (L) is one of the most influential plants in the world. Both wild and domesticated sugarcane varieties belong to the genus *Saccharum*, a subdivision of the large botanical family *Gramineae*. Contrary to popular belief, the origin of sugarcane does not come directly from India. Many studies have shown that *Saccharum officinarum* hybridizes with a wild species called *Saccharum robustum* in New Guinea. Although many theories about its distribution and homeland have been on the agenda until today, many studies suggest that sugarcane first spread from New Guinea. Studies show that *S. officinarum* has spread from New Guinea to Indonesia, India during the late neolithic era and since 600 C.E. to the southeast Arabia and East Africa. (A.H. Paterson et al., 2013).

Sugarcane is kind of tropical grasses, which is a sucrose reservoir (A.H. Paterson et al., 2013, p.44). It is a very gentle plant, and many conditions must be met for both its cultivation and harvest. They can grow up to 5 meters in length. As Galloway points out, sugarcane is a perennial plant that grows in humid tropical regions. He says that sugarcane should receive at least 1,000 millimeters of rain per year, but with proper irrigation methods, it can also grow in dry climates if the weather was at least above 21 degrees. The best results of sugarcane can be obtained when the weather is above 27 degrees. The growth of the plant will stop at 11-13 degrees. Sugarcane grows in various soils and can be planted on flat or slopes (Galloway, 2000, p.438).

Sugarcane appears in Greco-Roman literature as an exotic plant described with a taste of honey. The first time when the West encountered sugar was during Alexander the Great's campaign in India. Nearchus (360 B.C-300 B.C), the general of Alexander the Great who sailed from the entry of the Indus River to the Euphrates in 327 B.C.E, has mentioned this new plant: "A reed grown in India yields honey without the assistance of bees; although the plant has no fruit, a non-alcoholic beverage is made from this honey" (Mintz, 1986, p.20). Pliny the Elder (C.E. 23/24 – C.E. 79)¹ mentions sugarcane in his *Natural History* as a medicine; as does the botanist Dioscorides (C.E. 40-90 C.E.)², who describes sugarcane as a kind of concremented honey, called *saccharon* that can be found in reeds in India and *Arabia Felix*.

He mentions that it has a texture like salt, and it is so brittle that it can be broken between the teeth, as salt (Mintz,1986). As Sidney Mintz points out the terms used by *Dioscorides*, *Pliny*, and *Galen*³(129-126 C.E.) for the designation of this new plant namely as *saccharon* or *oaicxapou* can't be defined as a single specific substance that can be defined as sugar.

Mintz mentions that sugar is a substance that was produced at the end of a very complex process. Sugar must be crystallized from its liquid. It should be mentioned that while sugar-making records existed in Indian literature since 200 BC, the description of sugar making technique won't emerge in Europe before the Middle

¹ Pliny the Elder, Roman writer and natural philosopher. He is famous for his encyclopaedia of *Natural History*. In this encyclopaedic work, he provides explanations about natural events in almost every subject from astrology to pharmacology.

² Dioscorides (C.E.40-90C.E.) mentions about sugarcane in his *Materia medica*, one of the most renowned ancient medical texts.

³ Galen, Galenos or Călinus as it is known in the Islamic world. He is one of the most important physicians and philosophers of antiquity.

Ages. In ancient Indian literature, Panini's *Mahabhashya*⁴ is the oldest record of sugar, where sugar was described as a partially crystallized substance (Mintz, 1980, p.20-21). Mintz is not alone in his skepticism regarding the sugar definitions attributed to Dioscorides and Galen. Sato Tsugitaka discusses the translation inconsistencies of sugar that he observed in medieval sources such as Dioscorides' famous work *Materia Medica* that was translated into Arabic by *Hunayn b. Ishaq*⁵ (C.E.810-873. C. E) in Baghdad in 9th century and in *Ibn al-Baytar*⁶ (C.E.1197- C.E.1248) texts where he explains *Materia Medica* meticulously.

It took many centuries for sugar to spread from Southeast Asia to the Mediterranean and Europe. Sidney Mintz states that written information on sugar production is only available after 500 AD. Additionally, written sources illustrate the path of sugar to the West. According to Mintz, the letter of Byzantine Emperor *Heraclius* (C.E. 575 – C.E. 641) to Persian King *Khosrow the second* (C.E. 570- C.E. 628) demonstrates that sugar was produced in the 7th century A.D. According to this letter, sugar as a luxury exclusive in India was available in the territories encompassing the Tigris-Euphrates Delta at the head of the Persian Gulf, from the Indus Delta coast to the West (Mintz, 1985, p. 23). It should be mentioned that the arrival of sugar in Europe was related to the Arab conquests. According to Andrew Smith, the Arab invasion of Mesopotamia in 641 significantly helped to spread sugar cane gradually to the West (Smith, 2015). In this process, sugar cane spread first to the Nile Delta to the West of the Nile River and then to the eastern Mediterranean,

⁴ *Mahabhashya* is a commentary on Sanskrit grammar rules. It is attributed to Panini. and is thought to have been written in 200 BC.

⁵ Hunayn bin Ishaq, who lived during the Abbasid period, is a physician and translator.

⁶ He is an Andalusian Arab physician, pharmacist, and botanist.

East Africa, and the Mediterranean islands namely to Cyprus, Malta, Sicily, and Rhodes (Smith, 2015, p.17).

The Europeans gained a significant amount of knowledge regarding sugar production due to the Crusades, and after some time, they began controlling this production. Also, they took the skills they had gained during the Crusades everywhere they went and continued to develop the sugar production. Tsugitaka, while referring to Ouerfelli, asserts that after the fall of *Acre* in 1291, families with a hand in sugar production began production in Cyprus "using their experience in the holy land" (Tsugitaka, 2015, p. 31). In the region known as the Levant, soldiers, and pilgrims played a significant part in introducing sugar to Europe. According to Smith, one of the Italian city-states, Venice, dominated sugar production in the Mediterranean for approximately 500 years. This trade, which began with the Crusades, helped strengthen Venice (Smith, 2015). Sugar, a precious commodity, was eventually sought after by the various monarchs and rulers of Europe. In this context, the acceptance of sugar as a pharmaceutical agent plays a significant role. However, this has happened over a long period as Mintz demonstrates that the earliest written records of sugar in England date back to the thirteenth century. Mintz draws attention to the fact that after the 16th century the Portuguese and Spaniards started the sugar production in the Atlantic islands, which changed the character of sugar consumption in this continent (Mintz, 1985, p.70). Sugar, on the other hand, did not become a widely consumed food item in Europe until the 19th century (Mintz, 1985, p.96-162).

One of the reasons for the decline of the Mediterranean sugar industry is the black death, politic instability, epidemic and the adverse effects of the Little Ice Age.

However, from Galloway's point of view, the main reason was the change in the structure of land, labor, and trade, the effects of which were visible even during the crusades. By the 1500s, the plantation method had begun to be used in sugar production (Smith, 2015). He notes that when settlement began in Brazil in the sixteenth century, the plantation system was already a tested form of colonial land use (Galloway, 1977, p.194).

The type of sugarcane that would circulate in international trade until the early 1920s mostly came from *Saccharum officinarum*. It was called as "noble canes" by the Dutch merchants in the 19th century to indicate the importance of the sugar industry in Java (Galloway, 2000). This ascription also proves the importance of sugarcane in the world trade system until the modern era.

2.2 Sugarcane Production

Since the ancient times, the extraction process of sugar from cane have become a multi-layered and labor-intensive process. Before examining the sugar production process in depth, it would be useful to understand sugar from a scientific perspective. Sugar is a naturally white colorless pure, crystalline carbohydrate. In every kind of plant, from moss to the giant tree, there is sugar, starch, and cellulose; plants produce carbohydrates. Commercial sugar (sucrose) is obtained from cane or beet (Geerdes, 1966, p.177). The amount of sugar in cane sugar is approximately about 10%; the fibrous waste is called bagasse (Jones, 2016, p.17). If the air temperature and irrigation facilities required by the cane are provided, the amount of sugar in the cane may increase. Mintz states that although technologies have improved in time, the logic of sugar production from cane remains almost the same. He points out that the simplest cane needs to go through many "liquid-solid" processes, along with heating

and cooling processes, to produce sugar (Mintz, 1985,23). Schiwer compares the working principle of sugar mills in *Bilad al-sham*⁷ to the working principle of grain mills in general, but as he also emphasized and as Jones stated above, the basic principle is to be close to water:

The basic principles are the same: water flows through a channel leading to a penstock at the bottom of which is an outflow through which the water flows to the wheel chamber. Rather than being attached to a spindle connected to the grinding stones above, the wheel in the sugar mill is attached to a series of complex gears, which are joined to the bed stone in the mill chamber. Running along the edge of this bed stone is the edge runner stone. This is the equivalent of the runner stone in the grain mills, but rather than lying flat above the bed stone, it moves along the edge of the bed stone in a vertical position. This is because the sugar cane needs to be crushed rather than ground for the maximum amount of sugar syrup to be extracted. Some sugar mills have two vertical stones, rather than a horizontal bed stone with the vertical edge runner stone, but it is difficult to determine which of these would have been more efficient in crushing the sugar cane. In comparison to the simpler grain mill, the sugar mill was more like a factory than a milling complex; in addition to the mill, there were usually additional rooms and areas for boiling, refining and storing, as well as workshops (Schiwer, 2015, p.6).

The final and most crucial step in sugar production is the crystallization and purification of cane juice. The cane juice is boiled, and the concentrated cane juice is poured into inverted earthen cones to cool, crystallize, and strain the molasses.

Galloway says that this molasses can be reboiled to produce more sugar. Sugar is a product that finds its place in the market in many forms. For example, Galloway states that sugar is sold in powder, lumps, and loaves, and some sugars are sweetened with rose or violet water. To produce sugar of the highest quality, the sugar crystals were dissolved in water after the initial boiling process. Then the sugar was reboiled and recrystallized two or three times (Schiwer, 2015).⁸

⁷ Historical Syria

⁸ <https://www.levantineceramics.org/wares/514-reddish-levantine-sugar-pot-ware> Within the scope of The Levantine Ceramics Project, the results of excavations on ceramics produced in the Levant region between Neolithic times (c. 5500 B.C.E.) to the Ottoman period (c. 1920 C.E.), and photographs of

Sugar trade became a profitable business in history because it became a durable and easy-to-transport commodity, and it does not deteriorate easily. Andrew Dalby mentions that sugar in the form of cane will not be able to withstand long-distance trade, but that sugar can withstand long-distance trade in four different forms. When transported over long distances, sugar was preserved by being transformed into "white" sugar crystals, syrup, granules, or pellets (Dalby, 2004, p. 34). This is why sugar production requires a lot of attention and planning, from refinery to transportation.

2.3 The variety of Sugar in Medieval Islamic World

Sugar production is not limited to transforming cane juice into "sweet salt." Medieval Arabic and Persian sources provide information on various sugars and their benefits and practices. It is generally desired to refine sugar until it is the purest and whitest possible. Sugar is named after the regions where it is produced, its quality, its ingredients as well its production method. The extraction of granulated sugar from sugar cane involves arduous and labor-intensive processes. The process of achieving the highest level of purity and whiteness in sugar is a complex and challenging task. During the intermediate stages of the production process, sugars of intermediate quality are also produced. Different types of sugar were categorized based on their quality or the specific geographical and temporal context of their production. Furthermore, these entities were designated based on the specific essences that were incorporated into their composition. This has caused sugar to be named differently, even if it is of the same quality.

the resulting ceramics are available to everyone. Findings regarding materials such as vessels and pots used during sugar production are also included in this site.

As will be discussed further in the thesis, white sugar is recommended for use in the medical field. Muhammed Querfelli emphasizes that the recommended properties of sugar vary depending on its quality and variety and, he refers to Ibn Masawayh⁹ (C.E.777–857C.E.); for him, sugar is hot to the first or second degree, and to the middle of the first degree. Due to its cleansing properties, it is beneficial for the stomach. “Solid white sugar (*tabar zad*) is not a softener like Suleimani¹⁰ (*Süleyman*) and fanidh (stick, pennet or cheessugar). Honey from sugar cane softens more than honey from *fanidh*, and honey from solid white sugar (*tabar zad*) softens more than honey from sugar cane” (Querfelli, 2008, p.70). Furthermore, in this context, David Waines notes that plant terms in Arabic vary from region to region and over time, and these synonyms lead to confusion. He also notes that this confusion extends to sugarcane derived products. According to him, one of the reasons for this misunderstanding is that sugar cane goes through several stages of preparation and refining, including pressing, straining, and boiling. Waines explains this concept by referring to the common sugars like rock candy (*nebat*, *nöbet şekeri*) and solid white sugar (*tabar zad*). In contrast to what he claims Ibn al-Kuhn categorized them as distinct types of sugar. For Waines, the difference appears during their shape process. There are several distinctions between the production of *tabar zad* and *nabat* sugar. *Tabar zad* was placed rigidly in molds as sugar loaf, whereas *nabat* sugar was placed on palm sticks and was also produced with rose or violet syrup. In his influential work *Al-Murshid ilā Jawāhir-il-Aghdhiyah*, Al-Tamimi characterizes the medicinal uses of both sugar and honey. According to Al

⁹ Yuhanna ibn Masawaih or in Latin Janus Damascenus who was a pharmacist and physician in Baghdad.

¹⁰ It is thought to have taken this name because it was produced in the city of Sulaymaniyah, Iran.

Tamimi, *nabat* sugar is one of the most ideal sugars, and its the benefits was based on its composition. Rose water makes the substance lighter and less likely to soothe the bowels. Additionally, it is softer when thickened with blue-violet water, more effective in soothing the chest and cough, and more stable when boiled with rainwater (Marin and Waines, 1989, p.130-131).

Al-Antaki (C.E.1543-1599 C.E.)¹¹ gives different details for *tabar zad* sugar. According to Waines, this preparation could be a Syrian practice. Al-Antaki explains that *tabar zad* is made by adding a tenth of the volume of sugar to boiling milk. *Fanidh* sugar, which basically means “quickly dissolves in the mouth,” was a common type of sugar that was produced in long molds. During the process of decoction, sweet almond oil or finely ground white flour were added. To make a *Suleimani* form of sugar, red sugar was broken into pieces and cooked until it is purest (Waines, 1999 p. 188). “Despite the many benefits of sugar, it was considered harmful when the stomach was dominated by yellow bile. However, *Tabar zad* was less likely to turn into yellow bile because it was less hot and moist compared to other types of sugar (Waines, 1999, p. 189)”. In his work titled *al-Shâmil*, Ibn al-Nafis gives information about sugar kinds while explaining the properties of sugar. While saying that *tabar zad* sugar is very popular in Egypt and Syria, he also states that this sugar is also known *sukkar ubluj*. The sugar, called *mukarrar*, is dissolved in water and refined repeatedly by *ubluj*. During this process, it becomes whiter and purer but tastes worse. *Mukarrar* sugar is from the element earth (*ardiya*), it becomes more and more pure with each boiling. Among the sugar types that are repeatedly

¹¹ Davud bin Ömer el- Antaki or Davud el Antaki physician and pharmacist who lived in the sixteenth century. He is also known for his commentary on Ibn-i Sina's canon of the medicine.

boiled is *sukkar al-nabât*. After the boiled juice is solidified with a cone shaped earthenware mould (*ubluj*), it is dissolved in water, and left in a vessel (*qidr*). When the twigs from a date palm are thrown in the vessel, small rock sugar crystallizes on them. What is left remains in the pot as liquid (Tsugitaka, 2015, p.98).

Sukkar hawzî and *sukkar sînatâb* are other types of sugar mentioned in the work of Ibn al-Nafis¹², but there is insufficient information and examples regarding their production or properties. Furthermore, Ibn al-Nafis also says that because *fanidh* sugar is not purest enough, it has a reddish color and is in the form of small sticks and rings. The reddish sugar is raw sugar called *sukkar ahmar* and is made from boiled cane juice. After repeated purification, what remains in the vessel is molasses (*asal*) or (*qutara*) which is of higher quality. Lastly, he notes that the cane is consumed unprocessed like salt-like lump congeal on a cane (Tsugitaka, 2015, p.99).

Table 1:
The variety of sugar in Medieval Arabic and Persian Sources.

Sugar Varieties	
Tabar zad/Teberzed	Solid White Sugar/Sukkar ubluj
Süleymani	Suleimani/Soleimani
Fanid/Faniz/Banid	Fanidh/Stick/Pennet /Cheese sugar
Nebat/Nöbet Şekeri/Mükerrer	Rock Sugar/Sugar Candy/Rock Candy
Kırmızı/Kızılşeker/Sükker-i Ahmer	Red Sugar/Muskovado/Raw Sugar
Sukkar Hawzî ?	-
Sukkar Sînatâb ?	-

¹² He was a famous scientist of the medieval Arab world who is famous for his work on the body's circulatory system.

2.4 Sugar in the Ottoman Empire

It is impossible to pinpoint the exact year the Ottomans began consuming sugar as a commodity. At the very least, for therapeutic reasons, It is known that sugar was stored in Constantinople during the Byzantine Empire for therapeutic reasons (Petros Bouras-Vallianatos, 2021). Based on the verses written by *Yunus Emre* (C.E1238-1328 C.E.) and *Mevlânâ Celâleddîn-i Rûmî* (C.E.1207-1273C.E) (Güneş, 2015). It is certain that sugar is also known in Anatolia during the Seljuk era in the 13th century. According to Haşim Şahin, sugar did not come to Anatolia in the form of cane, but it was known as a processed product. Şahin says that sugar usually comes from Egypt, sometimes from Damascus and Iraq. He says that sugar has an important place in the culinary culture, it is significant product in making desserts during the Seljuk era. Among the sugar types and sweets known in this period in Anatolia, solid white sugar (*tabar zad*), sugar candy (*akide şekerî*), rose petals jam (*gölbeşeker*) can be listed (Şahin, 2008, p.50).

The history of *Âşıkpaşazâde* offers us perhaps one of the earliest examples of the use of sugar by the Ottomans. In *Âşıkpaşazâde's* there was an anecdote that candies were poured around during the wedding of Murat I's son in 1382 (Aşıkpaşazade, 240a). It is known that sugar has been imported since early times in the Ottoman Empire. At the end of the 15th century, Barkan's studies also show that sugar was imported in the 1400's (Barkan, 1979). Braudel mentions that in the 15th century, sugar was brought to Constantinople by the Portuguese ships (Braudel, 1972).

The Ottoman court had a well-known sensitivity about the supply of foodstuffs. The provision priority was firstly for the Ottoman palace and then for the capital city

of Istanbul. This sensitivity continued for sugar supply because it was a rare and expensive commodity that the state had to take precautions against sharply price changes. Sugar was mainly supplied from overseas countries since 15th century. The procurement phase of this valuable commodity and its arrival in Istanbul required a severe planning process. The direct assignment of the *Beylerbeyi*¹³ and the *Defterdar*¹⁴ to the sugar supply shows how the palace was sensitive about its provision. In fact, this sensitivity can be understood because pirate attacks and bad weather were the main factors delaying the sugar supply. Before November, sugar should be arrived in Istanbul, and the voyages were intensified in the summer months. Huge ships were preferred for the transportation of sugar, and small ships were not allowed. If authorities do not sail the solid equipment and encountered a pirate attack, officials were dismissed from their positions. The *irsâliye (accounting)* records show us the sailor names and which sugar types and how much sugar were loaded to the ships. Transportation routes were determined to be the fastest and shortest way. For example, in the transportation of Egyptian sugar, sugar was loaded on the galleys in the surrounding ports, especially in Alexandria, and then transported to the capital via the route of the island of Rhodes. There were also officials in the provinces whose duties is to ensure the sugar supply regularly. *Şeker emini*¹⁵ and *Şeker nazırı*, and *müteahhid*¹⁶ were officials who are responsible of sugar supply. These people were chosen among the experienced and faithful people (Karademir, 2015, p. 191-193).

¹³ The title given to the most authorized military and administrative chief who was at the head of the provinces in the Ottoman Empire.

¹⁴ The title given to a high-ranking official in charge of financial affairs in the Ottoman Empire.

¹⁵ The palace attendant took care of the supply of sugar in Egypt.

¹⁶ The name given to people who undertake a job.

Southern regions of the Empire, which have a coast on the Mediterranean and *Bender*¹⁷ region of Rumelia was significant for the sugar supply. After the conquest of Egypt (1517) and Cyprus (1571), the sugar needs were tried to be met from these regions. Sugar came mainly from Egypt; Cyprus and Syria also provided the sugar to Istanbul. During the 16th century, sugar was supplied also occasionally from Crete. The Ottomans also exported some of the sugar produced in their lands. According to the sources, foreign merchants came to Bursa - one of the international trade cities in the 16th century - to buy sugar for their countries. Likewise, Crimea was also a region of the international sugar trade. Some of the Egyptian and Cypriot sugar were imported to *Keefe* from *Ankara*, and it was marketed especially to Russia in the 16th century (Karademir, 2015, p. 186-187).

According to Arif Bilgin between 1573 and 1643, the share of sugar from Egypt was 86 % of the total supply of sugar in the Ottoman palace (Bilgin, 2004, p. 208). The town of Bulak, Ganya Sanjak, and the Sa'id in northern Egypt were the centers of sugar production. This process most probably was conducted by non-Muslims in their land called *haracciyye*. The Nile River was used as production zones because of easier irrigations and flat areas (Karademir, 2015, p. 187). Baf and Limasol regions were the centers of sugarcane production places in Cyprus. The sugar produced was sent to the capital rather than the internal consumption of the island. The Cyprus sugar was not one of the best quality sugars, but it was the whitest among others; due to the sale of sugar refineries in *miri* (state-owned lands) status, it would not affect the palace after a while (Bilgin, 2004, p. 208, 2010, p. 283-

¹⁷ Balkan city, which is located within the borders of Moldova today and was an important military base during the Ottoman period.

284, Erdoğan, 1998, p. 72-73). Nevertheless, the state exerts a significant amount of control over sugar production and consumption. The Ottoman imperial authorities were conducting an in-depth analysis of the potential for sugar production at the time. They had attempted to take possession of those lands by giving them the status of *miri* or by attaching them to the *Selatin*¹⁸ foundations in order to formally articulate them to the state (Karademir, 2015, p. 184). Sugar will be continued to be supplied to the Ottoman palace from Egypt during the 17th century. According to the Koçi Bey¹⁹ treatise forth-five thousand okka of sugar were received and twenty-five okka of sugar were given to the Sultan's imperial kitchen every day. According to Kochi Bey's calculations, one hundred and ten okka of sugar were spent on the Sultan's meals, compotes, sherbets, and all other areas (Çakmakçioğlu, 2008, p. 14).

Evliya Çelebi shows us how looks sugar refineries and informed us about developing sugar production technology in the Ottoman empire during the 17th century. He talked about forty sugar refineries in *miri* status in Cairo. For Evliya, a new method of extracting sugarcane juice with the help of cattle and workers has been discovered instead of the porphyry millstone, which was difficult to turn by a hundred pairs of cows in the past (M. Yerasimos, 2021, p. 189). Karademir notes that according to the traveler, the number of official candy shops in Egypt was forty while the number of employees was 300. These enterprises were mainly produced for the palace and were operated to order. Otherwise, while the civilian sugar refineries were 150, the number of employees was around 200. For him, a state monopoly on sugar existed in the Mamluk period, and the Ottomans merely stretched this

¹⁸ Selatin or Mazbut are foundations established and managed by the Sultan or the members of the palace.

¹⁹ Kochi Bey who was the 17th century Ottoman writer and statesman, known for his treatises presented to Sultan Murad the fourth and his brother Sultan İbrahim.

monopoly in favour of the market in a way that they did not give up control (Karademir, 2015, p. 189).

There are studies showing that the labour regime in the sugar factories was done with slaves in Cyprus. Processing raw sugar cane was conducted in sugar refineries by slaves. The physical power of the slaves was used to collect and crush the sugar cane and, if necessary, to rotate the machinery used in the crushing. Slaves had long been working in harmony with the Venetian families, which produced sugar in Cyprus and maintained the system, and they specialized in this business. The processing of sugar cane required a large amount of labor, which brought additional costs to producers. Except for the slaves, workers (*ırgats*) also worked in this process, and from time to time, the state was benefited from people's drudgery. Both states and people had separate sugar refineries. The *Miri* sugar refineries operated in the *mukâta'a* way, which was seen as more reliable by the state. Thus, the production and distribution process does not get out of control. In addition, in the villages where sugar cane was grown, the villages were taken into taxation, and the ones who gave the best price in the tenders were preferred as tax farmers (Karademir, 2015, p. 188). Following the 1571 conquest of Cyprus the state decided to employ foreign slaves (*parikos*) in *Miri* sugar refineries once a week. In Cyprus, sharecroppers were also involved in production. Besides, laborers were imported from *Antalya* and *Trablusşam (Tripoli Province)*²⁰ to work in the sugar business (Erdoğan, 1998, p. 73-74).

²⁰ Tripoli Province (Eyalet-i Trablus-ı Şam, 1579–1864) The geographical expanse of the region in question encompassed the coastal area, commencing from the southern boundaries of the Amanus mountains in the northern direction and extending towards the Maameltein gorge in the south. This gorge served as a demarcation point, separating it from the sanjak of Sidon/Beirut.

Thanks to Evliya Çelebi it is known what types of sugar existed in the 17th century and where they were produced in the Ottoman Empire. According to his accounts, white (*beyâz*) and yellow (*sarı*) sugar came from the Mellevi city of Egypt. Sugar loaf (*kelle-i şeker*), and thrice refined sugar (*sükker-i mükerrer*) came from the Damascus city of Hama and refined sugar (*mi'âd sükkeri*) came from Europe (*Frengistân*) and rock candy (*sükker-i katr-ı nebât*) came from Venice. For Evliya, the highest quality of sugar is *sükker-i mükerrer* of Damascus. But according to M. Yerasimos the rock candy (*nebat şeker*) from Hama, was the purified white crystalline sugar, and it was the most expensive sugar among other varieties. She mentions that the price of *sükker-i mükerrer* was equal to 60 piasters while rock candy (*nebat sükkeri*) was 100 piasters (M. Yerasimos, 2021, p. 188).

Evliya Çelebi comments also on sugar production. He mentions that sugar was produced in *Alanya, Antakya, Tarsus, Adana, Latakia, Sidon, Beirut, and Tripoli*. According to him, if desired, large quantities of sugar can be produced in these cities, and then it would not be necessary to import sugar of the Egyptian merchants (A. Baytop, 2004, p. 55, M. Yerasimos, 2021p. 189, Işın, 2019, p. 36). In this context, Mary Işın notes that the money spent on imported sugar harmed the Ottoman economy during the reign of Sultan Murad IV. It was clear that the issue was also on the agenda of the tradesmen. Evliya seems to convey these words from the butcher shopkeepers as he avoids criticizing the state. According to what we learned from Evliya, there was a dispute between Egyptian merchants and butchers during the great tradesmen procession in 1639 (Işın, 2019, p. 36).

Ottoman sugar production had tended to decline after a while in the middle of the 16th century. Even though there was production until the 19th century, American

and European sugar was superior in quality and price. There were several reasons why sugar production decline in the imperial lands. Karademir believes that the Ottomans could not follow the new techniques for purifying sugar. Additionally, sugar plantations had turned into sheep breeding, olives, and cotton fields throughout the century due to having more profit. In addition to the change in the economic balances of the Mediterranean basin, local changes had been an important factor in the decline of sugar production. As mentioned above, Cyprus was in a crucial position for sugar processing. Especially in the 17th century, the island encountered population losses, bandit raids, drought, earthquakes, corruption in sugar refineries and this fact negatively affected sugar productions (Braudel, 1972, Galloway 1977, Karademir, 2015, p.185).

Apart from the state, other important actors in the sugar issue were tradesmen organizations in the Ottoman Empire. Sugar tradesmen called *şekerfûrûşan*, *şekerci hîrfeti*, sugar tradesmen of Galata (*esnâf-ı şekerciyân- galata*) and herbalist (*attarlar*) were authorized for the sale of sugar and sugary products in the Istanbul. As Evliya Çelebi asserts, Galata merchants were also pharmacists (*ispençciyar- ispeçeran*), and they have sixty-seven shops in Galata. The spice bazaar was the center of the sugar market. It seems that the sugar trade was a problematic issue among the tradesmen in Istanbul and it did never come to an end. From time to time, the sale of sugar was prohibited apart from the spice bazaar because the state did not want to lose its monopoly (Karademir, 2015, p.205-206). Another example of sugar-induced controversy among tradespeople took place in the 1760's. The fact that European sugar (*frenk şekerî*) started to take more on the market in the 18th century caused many problems, and eventually, the state made a legal regulation. Until the 18th

century, sugar, which came from the Ottoman provinces, must have come to the herbalist (*attar*) in the spice bazaar and sold to the manufacturing groups. However, the fact that *esnaf* group selling sherbet (*esnâf-ı şerbetçiyan*) tried to bought sugar directly from merchants had sparked controversy. After a while, the state had to abandon its monopolistic stance on European sugar. By an edict of 1789, the purchase and sale of this sugar were allowed (Bilgin, 2010, p. 286-287, Eldem, 1999, p,72-73). However, Karademir believes that this legal expansion could not finish the domination of the spice bazaar in sugar distribution (Karademir, 2015, p. 206). It should be mentioned that the Levant trade roads became critical in sugar market during the 18th century. In this context, trade between the Ottoman Empire and France became increasingly important. Especially, the sugar and coffee imported from Marseille to Istanbul during the 18th century had a significant place in the market. Colonial sugar produced in Americas, has a higher quality and it was better refined compared to the sugar of Cyprus and Egyptian. So, the local products were damaged quietly (Eldem, 2011, 173).

2.5 The variety of sugar in the Ottoman Empire

To distinguish different types of sugar used and known in the Ottoman territories, Ottoman dictionaries may be helpful. The definitions given for sugar in Ottoman dictionaries may help to distinguish different types of sugar. The table below lists the types of sugar known in the Ottoman Empire according to different sources. This table also gives the opportunity to compare the types of sugar found in the Arabic and Iranian medical texts mentioned in the previous section.

Table 2:
The variety of sugar consumed in the Ottoman Empire

Sugar Varieties	Qualities and their English Synonymies
Beyaz Şeker	White Sugar
Kelle Şekeri	Sugar Loaf
Sükker-i Mükerrer	Twice or thrice refined sugar
Nebat Şekeri/Teberzed	Rock Sugar/ Rock Candy/ Sugar Candy/ Solid White Sugar
İngiliz Şekeri	British Sugar
Sarı Şeker	Yellow Sugar
Mî'âd Şekeri/Sükker-i Harcî	Inferior quality sugar
Frenk Şekeri	European Sugar
Sükker- i Gubâr	Granulated Sugar
Sükker- i Minar	-
Ham Sükker/Kırmızı şeker/qand	Raw/ Unrefined/ Muskovada/ Red Sugar

Rock candy is the sugar that is most found in sources and is known as the highest quality type of sugar. It is the crystallized sugar that is used as a medicine among the people for a long time. In the Ottoman, it is known as *nebat* or *nöbet* sugar. There are opinions that the reason why it is called *nebat şekeri* is because the crystals on the rope grow like plants. The reason why it was called *nöbet şekeri* over time is because it is a type of sugar frequently used in the medical field (Işın, 2019). *Sükker-i abluc/ebluc* is another example that it is called white sugar-candy and powdered sugar. Furthermore, the *kand- mükerrer* could be defined as high quality loaf sugar and rock candy in *Müntahabât-ı Lügât-i Osmâniyye* ²¹.

Raw Sugar is the unrefined sugar derived from the first boiling of extracted juice from sugarcane. The unrefined form of sugar cane also appears in sources under various names. It is referred as also red sugar or *muskovado*. In *Müntahabât-ı Lügât-i*

²¹ The Ottoman Turkish dictionary prepared by James W. Redhouse for publication under the name 1842.

Osmâniyye, James Redhouse is also used to define raw sugar *Kand-ı Ham*.

Teberzed/Tabarzed sugar is defined as rock candy, white sugar, high quality sugar (*âlâ şeker*) in many Ottoman sources, like *Lügat-i Nâcî*²². Furthermore, *the dictionary of Vankulu Mehmed Efendi*²³ state that it was cut with a hatchet that is why it is called *teberzed* (p. 263).

Ahmet Câvid (?-1803-1804 C.E.) explains in detail how *teberzed* and other types of sugar were produced in his dictionary titled *Tercüme-i Kenzü'l- İştihâ*.²⁴ He states that, *asel-i teberzed* is the sap (*şıra*) of rock candy (*nebat, nöbet şeker*). *Teberzed* is the Arabic pronunciation of plant sugar. Since it is very solid, it can be broken with a large, sharp-bladed hatchet, which has become a symbol for this candy. It is known that real sugar is the one that comes from cane, for which sugar cane is famous. They harden its sap by cooking it. If it is not purified, they call it red sugar. It is cooked again, cleaned, and separated from the pulp. If they pour it into a container, they call it *suleymani*, and if they cook it again and pour it into a cone-shaped mould, they call it *faniz*. In our country, it is called loaf-sugar (*kelle şeker*) and if there is excess in this third cooking, they call it *ebluc* and *kand-ı mükerrer*. If they pour it into a rectangular mould with equal sides, they call it a stick sugar (cheese, pennet, fanidh sugar). Furthermore, if they cook it once more, filter it, and pour it into a bottle, they call it *nebat-fezar(?)*. And if it is cooked with water and

²² Ottoman dictionary, first published in 1894, written by Muallim Naci, but completed by Müstecabizâde İsmet after his death.

²³ It was formed by the translation of El-Cevheri's famous Arabic dictionary called es-Sihâh by Vankulu Mehmed Efendi in 1589.

²⁴ It is the dictionary of Iranian poet *Mevlânâ Ebû İshak Hallâc-ı Şirâzî* containing the concepts related to food mentioned in his poem *Kenzü'l-İştihâ* (Treasure of Appetite). Then, Ahmed Câvid also makes various additions to this work, especially the food customs of his period. For a review of *Tercüme-i Kenzü'l-İştihâ*, see in Kut, Günay(2021), "Tercüme-i Kenzü'l-İştihâ yayını üstüne", Ağız tadı: Türklerde Yemek Kültürü. Simurg. p.206-221.

when it freezes, it is hit together with a ladle and pulled like long ropes; they call it *faniz-i haza'ini* (?) and *faniz-i senceri*(?). If one-tenth of fresh milk is added and boiled in the third cooking, it is called *teberzed*. This name was also used for crystal salt (*rock-salt*)(Ahmed Cavid p.130).

Marianna Yerasimos states that the name of *mî'âd şekerî* comes from the Arabic word *mun'âd*, meaning refined (*arıtılmış*). Yerosimos also adds that *mî'âd* sugar could be an inferior quality sugar or it could be the sugar called *harcî*. (Yerasimos, 2021 p.188). For Işın, *Mî'âd Şekerî* is a type of cane sugar syrup. These two definitions show us that *mi'ad şekerî* cannot be classification as high-quality sugar types. The expressions *European Sugar* and *British Sugar* are important examples of naming sugar types according to the places they come from/export. These nomenclatures indicate that sugar is taken from different regions of Europe the yellow sugar mentioned in above table that it is come from the *Mellevi* in Egypt must have been one of the sugars of intermediate quality. Most likely, the expression yellow sugar indicated that the sugar was not completely white, and its quality is low.

2.6 Sugar Consumption in the Ottoman Empire

“That wise person, now listen. my word literally it is the essence of sugar cane”.²⁵

These lines belong to the *Eyyubi*²⁶, a historian who lived during the reign of Suleiman the Magnificent. His promise compared to the essence of sugar cane

²⁵ “Kulağ dut imdi ey merd-i hîred-mend . Sözümdür gâyetile sükker ü kıand”. Menakıb-ı Sultan Süleyman (Risale-i Padişah-name). p.5

²⁶ Although there is not much information about the *Eyyubi*, he is a historian and writer who is known to have lived during the reign of Suleiman the Magnificent. He grew up in the Eyüp district of İstanbul, so his name is thought to be *Eyyubi*. His work, which deals with the events of the reign of Suleiman the Magnificent, mostly the construction of aqueducts in İstanbul and the construction of fountains in various quarters of the city, is called Menakıb-ı Sultan Süleyman or Risale-i Padişah-name.

indicates the symbolic meaning of sugar in the Ottoman culture. As is well known, sugar was a rare and difficult to find commodity. These lines convey how valuable the promises of *Eyyubi* are. Our limited literature can give us an idea about sugar consumption patterns in the Ottoman Empire. Sugar, which was a luxury food item, was primarily consumed by the Sultan, the members of the dynasty, and the high-ranking people of the palace during the classical age. Nevertheless, there is limited data available regarding the sugar consumption patterns among the general population. It is a known fact that sugar was substituted by other kinds of sweeteners such as molasses of grape, honey, dried fruits, and raisins in modest tables (M. Yerasimos, 2015). A 16th century Ottoman intellectual, *Gelibolulu Mustafa Âlî* explains the social status of sweet foods in the ottoman culture in his treatise called *Meva'idü'n- Nefais fî Kavâ'idü'l-Mecâlis*.²⁷ In the section where he states that marijuana smokers were craving of sweet foods, he classified also to some extent the sweet dishes. He mentions that if people of the middle class crave of sweet foods, they will fall in love with *süzme bal* (filtered honey); whereas the members of the high class will want sugar sherbet or halva probably made of sugar; and those in high positions will want various sherbets prepared with sugar (Şeker, 1997, p.210). It should be mentioned that making a sweet dish with sugar or honey, will influence the price of the product. Honey and molasses of grape were less expensive than sugar in the Ottoman empire. According to the maximum price lists of the year 1600, honey was sold at 12 or 13 piastres per okka, refined sugar from Egypt (*sükker-i mükerrer*, *Mısır*) at 80 piastres and refined sugar (*mükerrer şeker*, *reşid*) at 70 piastres. The

²⁷ Written by the poet, writer, and historian Gelibolulu Mustafa Âlî, it is a work that gives important information about the social life and intellectual life of the sixteenth-century Ottoman while showing the feature of a kind of politics.

price of *pekmez* was lower than that of honey. According to the list of maximum prices in Istanbul in 1640, the price of *pekmez* was 6 piastres per okka, that of clarified honey (*asel-i musaffa*) was 13 piastres per okka. Refined sugar was the most expensive: one okka was 60 piastres. Unrefined sugar (*ham sükket*) was sold for 40 piastres (Samancı, 2015). Sugar will continue to be expensive than honey until the end of the 19th century. For example, in 1800's, the cost of jam made with honey was much lower than that made with sugar (Altıntaş, 2020, p. 129).

Sugar was considered one of the most valuable commodities, particularly before the advent of the industrial revolution in the world. It has evolved into a commodity that members of society's upper echelons take pleasure in displaying as a sign of their power and wealth in the ottoman society as it was in early modern era in Europe. Sugar has also symbolic meanings. This symbolic meaning is usually associated with abundance, wealth, pleasure. At this point, Hedda Reindl Kiel emphasizes that sugar represents love, pleasure, and desired aspects of life both in the Islamic world and the West. Therefore, the abundant use of sugar, even in meat and fish dishes, symbolizes the Sultan's love for his servants (Reindl-Kiel, 2016, p. 84). Another example of the symbolic meaning of sugar is the coffeehouse engagement procession held in Bektashi lodges. In this ceremony organized by Bektashi Lodge and Janissaries, Bektashi's father takes "a pinch of sugar and a pinch of coffee" and throws it into the fire, thus adding a spiritual atmosphere to the ceremony with prayers (Özlü, 2011, p. 180 as cited in Soyoyer, 2005: 7; Alkan, 2009: 251). The most obvious interpretation of sugar's symbolism is revealed by the fact that it is frequently given as a present in the Ottoman court. For instance, in the gifts of the embassy delegations or the banquets offered to them, sugar and sweet dishes

made with sugar were consistently a sign of reputation. For example, in 1582, for the honour of the circumcision of prince (*Şehzade*) Mehmed, son of Murad III, the *beylerbeyi* of Egypt sent him sugar, among the other precious gifts (Reindl-Kiel, 2016, p. 84).

There was sugar everywhere where there was entertainment. Sugary treats and sherbets drew great attention at the ottoman banquet tables. Besides, like European festivities, Ottomans used also sugar for their visual shows. Three dimensional figures made of sugar were part of the festivities since the early ages in Ottoman tradition. During the early modern period, a significant portion of the population faced challenges to access sugar as a commodity. The extensive use of sugar in substantial quantities during these ceremonial festive events may be linked to its relationship with power (İşkorkutan, 2021, p.67).

In the 15th century, *Tursun beg*²⁸ who was one of the soldiers of Mehmet the second noted that, during the circumcision ceremonies of the sultan's sons, *nahıls*²⁹ and sugar gardens made by the *sükker nakkaşları* were displayed at the feast (Tulum, 1976, p. 88). In these festivities, *Sükker nakkaşları*³⁰ used sugar to create three dimensional figures such as nahls, sugar gardens, fruits, and animal figures which were the essential and symbolic parts of circumcision festivities and weddings. After the finishing ceremonies, these figures were plundered by the public. Bigger pieces were presented to foreign ambassadors and important guests on the spot, while the rest was distributed to the public as it was during the 1582 festival (And, 2020, p.

²⁸ Ottoman historian, known for his work *Târîh-i Ebû'l-Feth*, who lived during the reign of Sultan Mehmet II.

²⁹ An ornamental tree made of beeswax on an iron skeleton, adorned with gold and silver ornaments, artificial flowers and fruits, which is carried in front of the bride and placed in the bride's room or prepared for circumcision weddings.

³⁰ It is the name given to the people who make the figures made of sugar.

114). The consumption of the *nahıl*'s decorative sugar and fruit parts signifies how the sultan's vitality is internalized by the (mostly male) members of the community (Rahimi, 2007, p. 115). Large amounts of sugar were spent on these ceremonies. For these figures, lots of amount of sugar was used. For example, in 1539 ceremonies held for the circumcision wedding of Bayezid and Cihangir, sons of Suleiman the Magnificent, 9.595 kg of sugar was used by *sükker nakkaşları* in the preparation of *nahıl* and other decorative sugar products (S. Yeresimos, 2002, p. 39).

It is not known when sugar was entered in the Ottoman culture. However, the court kitchen accounts show us that the court consumed sugar in the 15th century (Bilgin, 2010, p.280) and the Ottoman palace consumed *nebat*, *mükerrer* (twice or thrice refined sugar), and *harci şeker*. Within the 16th century, *mükerrer*, *mi'âd* and *bey' şeker* came from Egypt, which was produced by *bulak kamışı* (Bilgin, 2004, p. 208). Sugar came to the palace distribution for the sultan and his family, to inner service (*Enderun*), the kitchen, to the helvahane, was used during the hunting ceremonies, and was given as a gift to the ambassadors. (Karademir, 2015, p. 183-184-185) Apart from the Ottoman palace, the princes' palaces were also one of the main places where sugar was consumed. It could be thought that these palaces as the projection of the Topkapı Palace. In the middle of the 16th century, Şehzade Mehmet, the son of Murad the third, bought 5.623 okka sugar from Egypt and 1.693 okka sugar from *hassa* merchants to his palace in Manisa³¹ (Emecen, 2016, p. 116).

The rate of consuming honey was much higher than sugar between the 15th and the 19th centuries in the Ottoman palace. However, as Bilgin points out, honey

³¹ Between the fifteenth and seventeenth centuries, Manisa became one of the important political centers where the Ottoman princes gained experience of reign.

consumption increased only 4.5 % between 1489 and 1573, while sugar consumption increased 23 %. While the amount of honey purchased in 1489 was more than sugar, the sugar level became constantly higher since the 16th century. Even though in the 17th century, the sugar ratio among the sweeteners added to the janissary's baklava was approximately 0.18%. Forty percent of the sugar that reached the palace kitchens was allocated to the confectionary kitchen (*helvahane*) to produce sherbet, compote, jam, paste, halva, and confectionery. Besides, bakeries delivered sugar for the use in some products (Bilgin, 2010, p, 282-288).

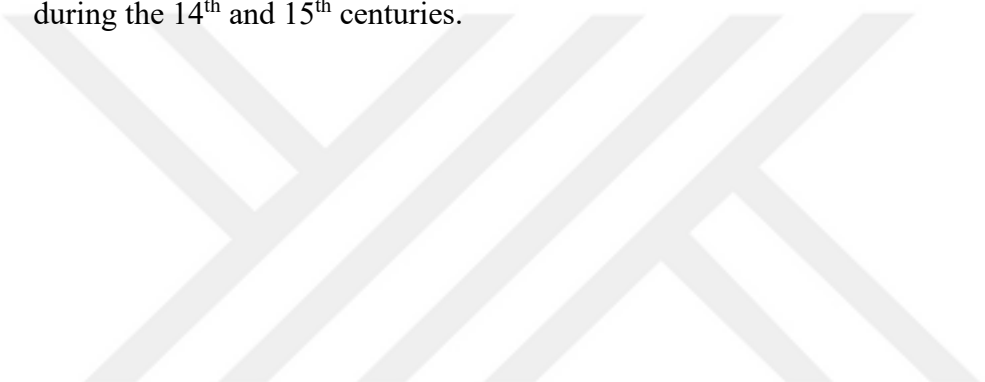
Although it was known that purchases came from Damascus and Tripoli from time to time, those appear to be irregular. Throughout the 17th century, three kinds of sugar continued to come from Egypt, ordinary (*vasat*), and *harci* quality sugars. The *narh* book of 1640 documented four types of sugar in the Istanbul market, *sükker-i mükerrer*, *ham sükker*, *nebat sükkeri* and *beyaz* which was offered in small quantities, among others in the market (Kütükoğlu, 1983, p.89). In the middle of the 17th century, European sugar comes to the Ottoman Empire. Records reflect us that sugars which were coming from foreign countries were directly called as European sugar (*Frenk şeker*). In addition, some documents can give us clues about the countries where sugars were purchased. For instance, in the 18th century, *Felemenk şeker* can be found in the market. Besides, new types of sugar started to be consumed like *sükker-i frengi*, *sükker-i kelle*, *sükker-i minar*, and *sükker-i gubâr* (granulated sugar). Many sweeteners such as molasses, honey, and sugar were mentioned in the *narh* records belonging to the second half of the 18th and to the first half of the 19th centuries (Çakmak, 2012, p. 47).

The types of sugar consumed in the palaces in the 19th century were generally sugar loaf (*şeker-i minar*) and granulated sugar (*şeker- i gubâr*). The use of honey seems slightly less during this period, compared to other centuries (Samancı, 2016, p. 191). According to the account registers of the imperial kitchens dating from the 19th century, it can be discussed that the use of sugar was widespread at that time in the kitchens of the Palace. The consumption of sugar then exceeds that of honey (Samancı, 2015). During the 19th century colonial sugar from Europe such as British sugar (*İngiliz şeker*) existed also in the capital market. But at this point, Arif Bilgin states that the increase in imports would still not be enough to exclude sugar from being a luxury product. But the invention of sugar beet processing technology tends to spread sugar as a sweetener for the public in time (Bilgin, 2004, p. 208, 2010, p. 280-288).

Sweets constitute one of the most unique parts of the Ottoman cuisine. It is highly developed in terms of diversity and preparation techniques (Samancı, 2019, p.84) Without a doubt, sugar and honey were two of the most popular sweeteners used in the cooking process—those who cannot afford or gain access to sugar because of its scarcity. Sweeteners like honey, molasses, and raisins were utilized. Sugar has also become an integral part of the Ottoman culinary tradition. When we consider, however, that sugar was a very expensive, high-status, and luxury product, especially during early modern era, the members of the dynasty, particularly the Sultan, the palace people, and the high society could have consumed sugar in the sweets (Kara, 2019). However, assuming that sugar was only used in sweets during this time is inaccurate. The food was spicy because of the early modern and premodern emphasis on eating healthy. The line between sweet and salty was blurry

in culinary understanding. Many recipes also mention for sugar, either to reduce the dish's sourness or improve its appearance.

In a nutshell, as was mentioned earlier, sugar was initially used as a medicine by Sultans, Kings, and other people of high social class standing during its spread from Southeast Asia to Europe. After that, it was used in the kitchen because it was considered a kind of spice. Within the scope of this thesis, the next chapter will focus on the manner in which food and beverages were portrayed in Ottoman medical texts during the 14th and 15th centuries.



CHAPTER 3

FOOD AS MEDICINE THE HEALING POWER OF FOOD AND BEVERAGES

“Let food be thy medicine and medicine be thy food” - Hippocrates

“Undoubtedly, one of the most important aspects of curative medicine

(hifz- ı sıhha) is avoiding the harmful effects of food” - Rhazes

*“The stomach is the abode of disease, and abstaining from injurious
foods is the principal part of medicine”* - Ibn Garcia

3.1 The Humoral Theory

The connection between nutrition and physical well-being has been the subject of numerous proverbs and sayings. The first famous phrase attributed to Hippocrates (460 B.C.E-377 B.C.E.)³² emphasizes the importance of diet in perception of health. The second phrase belongs to the Abu Bakr al-Razi's (Rhazes – 865 C.E-925 C.E.)³³ booklet in *Physician's manners (Ahlâku't-tabib)*³⁴ was written in 9th or 10th century. And the final saying comes from the Ibn Garcia by Abui al-Tayib³⁵ who was a writer and priest lived during the eleventh century. These proverbs, which come from as far back as ancient Greece and as late as the Islamic world of the Middle Ages, illuminate the preeminent function that food has always played in the medical system. In the Mediterranean world, starting with ancient Greece, in Arabic culture in the medieval era, Byzantine and Europe, and the Ottoman culture, the humoral

³² Famous physician of the ancient Greek, whose name is also mentioned as *Bukrat* physician in Islamic sources and who is known as the father of medicine.

³³ He is known as the "Galen of the Arabs" due to the significant contributions that he made to the field of medicine throughout his career as a physician, chemist, and philosopher.

³⁴ In this work, Rhazes wrote his views on medical ethics and presented his suggestions on the relationship between medicine and morality.

³⁵ Ibn al-Tayyib (died 1043) was a Nestorian priest, physician, theologian, and philosopher.

theory that reflects relations between food and health had been a prominent understanding.

The theory of the four elements has maintained its significance over the course of many centuries and has had a significant impact on how people view the world as well as their own bodies. Everything in the universe, according to this theory, is composed of four fundamental elements: fire, air, water, and earth³⁶. These fundamental components do not undergo any changes, and the formation of everything in the universe results from integrating and encompassing them in particular proportions. While the universe consisting of these elements and containing beings was called the macrocosm; the human, who was believed to reflect the universe, was seen as the microcosm. The equivalent of the four main elements in the human body is blood (*kan*), phlegm (*balgam*), yellow bile (*saфра*) and black bile (*sevda*). Thus, the human body is consisted of a mixture of these four fluids called humor. Phlegm, blood, yellow bile, and black bile, all of which are present in the body in varying concentrations, also contribute to the formation of an individual's temperament. It was called as “humoral theory” or “pathology” and in the Islamic world, it was known as *ahlât-ı erbaa*.

According to Ayşegül Demirhan Erdemir:

The four fluids, which are thought to be the equivalents in the human body of the four elements bring about formation and deterioration in the natural world. The human body is thought to be the equivalent of the natural world. It was the foundation upon which Hippocrates built his humoral pathology (Erdemir, 1989, p.24).

These four fluids mentioned in the humoral system are produced by the digestion of food in the stomach and carried throughout the body by the blood. After

³⁶ Nawall Nasrallah claims “fire and air are light; water and earth are heavy.” (Nasrallah, 2007, p.56)

food is chewed in the mouth, it is cooked and digested with heat and saliva; this process is referred to as the first digestion. After getting to the stomach, food undergoes a second digestion with heat and other substances, known as the *keylus*³⁷ or second digestion. Here, leftover food becomes a substance similar to barley water. Some of the digested food in the stomach goes to the intestines and the purest form is absorbed there and the excess is thrown out. The rest goes to the liver, where the third digestion takes place. Everything that is digested is cooked in the liver. Consequently, bile (safra) and black bile (sevda) are created. The uncooked portion of blood transforms into phlegm, whereas the cooked portion becomes blood (Altıntaş, 2021, p.26).

Eşref Bin Muhammed the physician from the 15th century, asserts that temperament means “mixing,” and the different proportions of these four fluids found in different people give rise to a wide range of temperament types. In this regard, Zafer Önler mentions four temperament types: phlegmatic, choleric, sanguine, and melancholic. When blood predominates in an individual, that person tends to have a positive attitude and be physically active, the sanguine temperament describes someone with this personality type. The phlegmatic temperament describes people who are more serious and less active who tend to have a predominance of the phlegm element in their body. These individuals enjoy sleeping and are not affected by strong emotions. The melancholic temperament is assumed for people who are dominated by black bile. These people are seen as emotional. Finally, the person with more yellow bile in his body would tend to be angry, and these people were thought to have a choleric temperament (Önler, 2019, p.18). Moreover, the humoral

³⁷ Keylus time: When the digestion ends and the nutrients begin to be absorbed

theory attributes quality to everything in the universe, which is a remarkable characteristic. There are four of each of these qualities, hot (*sıcak*), cold (*soğuk*), dry (*kuru*) and moist (*nemli*). Unquestionably, the fluids and qualities that constitute the human body also can be applied to organs. This is the case. Every organ possesses its own set of qualities. According to Altıntaş, the temperature of the heart and liver is hot, whereas the temperature of the brain and bones is cold, the lungs are moist, and the hair is dry (Altıntaş, 2021, p.29).

It was also believed that each of these four fluids in the body circulates in different organs. For example, the blood circulated through the body, and was also considered fluid and hot. Phlegm was thought to be fluid and cold, and it was assumed to be stored in the brain. Black bile was thought to be dry and cold in nature and was believed to be found in the spleen and stomach. The nature of yellow bile is dry and hot, it was also in the liver. At this point, a person's diet was very important because, within the body, nutrients are converted into the four substances that it was discussed earlier. The changing of the seasons was yet another component of this broad understanding of medicine. Alterations in the human body would take place because of the shifting climatic conditions of the seasons, and preventive medicine practices evolved in response to these shifts. It was expected that one of these four fluids would become active during each season. Erdemir asserts that spring seasons stimulate blood, summer try to act yellow bile, while autumn bring black bile, winter also stimulate phlegm. According to Erdemir, the idea that the changing of the seasons influences human bodies and, as a result, has caused people to get their bloodletting at specific times of the year is what is behind the widespread practice (Erdemir, 1989, p.24).

According to humoral theory, plants and foods of various kinds were used to heal the body's natural balance. Even in this context, the effects of the four humors and elements were visible. When formulating medications for the sick person, these properties of the elements that were attributed to them were also taken into consideration. According to this conception, the earth element is characterized by a dry and cold quality. It was thought that the water element was cold and moist, while the fire element was dry and hot, and the air element was hot and moist (Önler, 2019, p.19). Within the context of this understanding, food culture has evolved since ancient times. Inspired by humoral understandings, people chose specific food to sustain a balance in their bodies. The utmost priority should be placed on the prevention of the individual's health, which can be accomplished by preserving the equilibrium that exists within the body. In this context, Innocenzo Mazzini has tried to take attention to the significance of nutrition. He argues that “the right food, chosen specifically for the complaint, preserves or reestablishes balance. It is transformed into liquid in the stomach and absorbed through the veins, thus compensating where necessary for deficient or corrupt humors” (Mazzini, 2013, p.173).

Mazzini draws attention to the fact that the digestibility of food is the most important factor that physicians take into consideration in this medical system. Consumption of food and drink was a primary factor in correcting the imbalances that had developed in the body. The four humours and the four qualities associated with each of them were also sought after in the realm of food and drink. Therefore, as he stated, it was necessary to understand the composition of each food and drink (Mazzini, 2013, p.176). However, diet is comprised not only of the food that a person

consumes but also of factors such as age, nature, gender, the seasons, and even occupation. Nutrition that is in accordance with one's own nature is, of course, of the utmost importance. The treatment is administered by the physicians while they are aware of all these aspects. The understanding of nutrition, which has been shaped by health concerns since ancient times, has also shown its effect in medieval Europe. These concerns have been present since the beginning of time. In accordance with what Mazzini had previously stated, the primary objective of cooking is to stimulate the digestive system. According to Mazzini, in earlier times, digestion was equated to the act of cooking. According to this understanding, which continued in medieval Europe, for example, spices were considered "hotness" and used as a counterbalance to "coldness," and each spice had its own specific degree (Flandrin, 1999c, p.367). An additional criterion for ensuring the nutritional quality of food is that it has to be delicious. Eşref Bin Muhammed says that "if the food is tasteless, it will spoil the appetite and weaken the stomach" (Eşref Bin Muhammed, 2021, p.176)³⁸. Flandrin has several thoughts that are comparable in regard to the late medieval period. He goes on to say that back then, physicians paid attention to taste because they believed it to be significant for dietary routine and, as a result, digestion (Flandrin, 1999c, p.371).

The knowledge of nutrition and health that had been passed down from ancient times had a significant place in the world of medieval Islam and was given the opportunity to advance during this time. David Waines claims that diet played a central role in health perceptions in the Islamic world during medieval times. According to him, the translation movement started around the 8th century and

³⁸ "Ġidā kim lezzetsüz ola, iştihāyı künd eyler mi' deyi süst eyler."

significantly created a high culinary culture in the Islamic world. As a result of this translation movement, which had its beginnings in Baghdad, the corpus of Hippocrates and Galen (129-126 C.E.) was brought into circulation, particularly during the time of the Abbasid caliphate during the 8th to the 12th century. Waines states that the activities in translation also laid the groundwork for original studies, and he notes that significant studies on dietetics were carried out during this period. The formation of a sophisticated culinary culture has been aided in part by both translation work and new studies on diets (Waines, 1999, p.231). Waines believes that Abu Muḥammad al-Muzaffar ibn Naṣr ibn Sayyār al-Warrāq's cookbook *Kitab al-Tabikh*³⁹ is a clear sign of the high culinary culture of that period. For Waines, this manuscript demonstrates us neither "Greek diet traditions nor ancient Near eastern cultural centers" (Waines, 1999, p.233). According to Waines, this cooking manuscript, which dates to the early 9th century includes a large number of recipes from that period, reflecting the oral tradition, it displays the courtly taste of time. As stated by Waines, the effects of the dishes on the physical well-being of the individual were also described in the work. Daily diet consumption patterns were crucial because nutrition is the major concerns of physicians; so cooking manuscript that Waines calls as culinary manuals gained importance in this sense (Waines, 1999, p.240).

In this context, Paulina B. Lewicka claims that because of the written sources during this period, more and more people gained access to the information, especially the professionals. She demonstrates the significance of food due to the

³⁹ It is the oldest Arabic cookbook thought to have been written/compiled in the tenth century. Its author is Muḥaffar ibn Naṣr ibn Sayyār al-Warrāq.

curative and preventative effects it possesses, which was why culinary manuals were becoming increasingly important. She states that besides countless culinary manuals, dietetic, pharmacological, and medical manuscripts were found in the book market of the medieval Arab-Islamic world (Lewicka, 2014, p.611). It is clear, that the belief of the physician's intervention will be minimized by eating healthy has also been effective in this situation. These knowledge circles, which date to the 10th century, not only shed light on the food and nutrition cultures of the previous centuries but also shed light on the medical aspects of those centuries.

3.2 The Humoral System in The Ottoman Medicine

As it is known, the Ottoman understanding of medicine has a holistic sense, followed by the humoral system. In such a vast geography and an empire where many different cultures coexisted, other medical methods and folk beliefs undoubtedly acted together. In this regard, Miri Shefer-Mossensohn points out that, the medical beliefs of the Ottomans originated from Central Asia, and folkloric medicine emerged due to interaction with cultures in Anatolia and the Balkans in the following centuries. Medicine is called *tıbb-ı nebevi* or prophetic medicine based on religious beliefs and humoral medicine. This internal medicine system and the subsystems they housed shaped the medical understanding of this vast geography. However, according to her, the point that must be underlined is that these three systems are not independent of each other (Shefer-Mossensohn, 2009).

She uses the term of the integrative body to explain Ottoman medical perceptions. As the body was viewed as a means of worshiping God, maintaining physical health was crucial (Shefer-Mossensohn, 2009, p.86). The physician provides a list of recommendations tailored specifically to each patient, considering the

patient's personality and the qualities they possess, as well as those that will not throw off the body's natural equilibrium. In this sense, the word diet is significant. Nevertheless, as she explains, the term diet was used in a broader sense than simply referring to one's daily nutritional practices. Diet, in a nutshell, entailed not only the food that a person consumed but also the manner, in which they organized their daily activities (Shefer-Mossensohn, 2009, p.24). She determines that:

In the humoral context, “diet” refers to the *sex res non-naturales*, the six nonnatural, which include light and air, food and drink, work and rest, sleep and waking, excretions and secretions (which include also baths and sexual intercourse), and finally dispositions and states of the soul (Shefer-Mossensohn, 2009, p.24).

It is possible to find examples of humoral pathology and nutritional regimen in the Ottoman medical texts, which are based on Islamic medicine. Food and beverages determine the properties of humors. One more thing about this theory that needs to be emphasized is the fact that plants have their own unique qualities like individuals. As a result, these characteristics were taken into consideration when assessing how effective they were in treating diseases. In her article, Nuran Yıldırım examines the relationship between food and medicine in Ottoman medical manuscripts from the 14th and 15th centuries. According to her, in Turkish medical texts, this humoral pathology serves as the foundation for treatment. Yıldırım discusses two primary objectives while drawing attention to the influence that nutrition has on health. These objectives are to find healing through food and maintain a healthy state of being. She says that soups were at the top of the foods recommended against diseases and symptoms (Yıldırım, 2008, p.153).

Shefer-Mossensohn emphasized that the fluid that causes the person's sickness through diet had to be balanced with the opposite regimen within the humoral

system. For this reason, across all strata of society, food and drink were regarded as a potential source of therapeutic benefit. Foods and beverages are divided into groups to find the balance of humor in the patient's body at the beginning of the points to be considered in treatment with food. First, foods are hot or cold. For example, some foods cause blood formation, while dry and heated foods cause yellow bile. Nil Sari asserts that the opposite of food should be consumed to maintain the body's balance and mitigate the harmful effects of food. According to her, after consuming salty, bitter, and pungent-smelling foods, one should consume wet, moist, and flavorless foods such as gourd and cucumber (Sari, 1981, p.246). As a result, the Ottoman palace places a significant emphasis on this aspect of food. According to Shefer, during the early modern period, a great number of the physicians working in the palace took an interest in the field of medical dietetics, which led to the writing of new works on the topic (Shefer-Mossensohn, 2009, p.55).

The connection between health and food was imprecise because the food regimen played an integral part in the treatment of people. If it was taken the example of a recipe, it might not be obvious at first glance the reason of using different spices in a dish. For instance, paste (*macun*) and sherbet were two forms of medicine extremely widespread in Ottoman medical manuals. According to Shefer-Mossensohn, honey, sugar, or both can be added for thickening and sweetening the sherbets. She claims that the consumption of sherbet was a regular part of the meals in the Ottoman palace, not all these sherbets have therapeutic properties because they were prepared in the kitchen, not in the pharmacy. Also, she maintains that this is because not all these sherbets contain the same ingredients. Additionally, she

emphasizes that one of the crucial points is the similar the terminology used in pharmacology and cuisine (Shefer-Mossensohn, 2014, p.65).

The main departments that constitute the *Topkapı* Palace and the way their function can help us to understand the connection that has been established between food and health. The imperial kitchens of the Ottoman palace have been constituted of ten different units in the sixteenth century. The tenth kitchen, the confectionary called “*helvahane*” was devoted to the preparation of desserts, fruits syrups and medicinal preparations. The imperial palace also hosted a hospital and pharmacy rooms as well as the house of the chief physician called *Başlala* tower. These units were used for the preparation of drug prescriptions as well as the storage of the medicinal ingredients (Kumbaracıoğlu, 1933).

3.3 The Role of Physicians in Humoral Theory

Inevitably, if we are discussing the relationship between nutrition and health at the *Topkapı* Palace, the Helvahane part of the imperial palace's kitchen must be examined in depth. Helvahane was established in the 16th century as a supplementary unit in the palace kitchens (*Matbah-ı âmire*). Helvahane, which held a significant position in the organizational structure of the kitchens in the palace, served a variety of functions. The first of these functions was the production of various sweets, pickles, sherbet, and jams. In addition, materials such as hand and laundry soap were produced in this unit (Tufan, 2018). Under the chief physician's direction, imperial kitchens were used also to produce medicines. The chief physician played a significant role in the process of preparing both the dietary meals (called *perhiz taamı*) and the medicines. It should be essential for a physician's career to have knowledge of foods that are suitable for the temperament and nature of the

individuals they treat. It should be noted that the relationship between nutrition and physical well-being was very significant.⁴⁰ According to Taşköprülüzade,⁴¹ (1495 C.E.-1561 C.E.) Sultan Bayezid II showed great favor and kept with Ahi Çelebi⁴² (1432 C.E.-1532 C.E.) because he was master of the preparation of dishes suitable for his temperament and nature. Taşköprülüzade mentions that this was the reason why Ahi Çelebi was able to stay with the Sultan. In this regard, Sinem Serin suggests that Ahi Çelebi's career in the palace within the context of the relationship that exists between the kitchen and the chief physician. His career in the palace began as an inner butler (*emin-i kiler*) and lasted as the chief physician (Serin, 2021, p.100).

In his work called Physician's Manners (*Ahlâku't-tabib*), Abu Bakr al-Razi (Rhazes), one of the famous doctors of the 10th century, discusses how a physician should have professional ethics, he touches on food, and explains how physicians should regulate the diet regimes of their patients. He mentions that:

You need to be aware of how much food the patient consumes daily, the type of food that he or she consumes, how little or how much he or she consumes, and whether he or she enjoys the foods that they consume. Whoever knows what a person consumes, drinks, sleeps, wakes up at, when they are free and when they are busy, their sexual life, and other aspects of their life cannot at least give them the wrong medicine (Abu Bakr al-Razi, 2020, p.89).

Since then, there has not been much of a shift in the responsibilities expected of physicians. In fact, in the Ottoman Empire, which was in a way the heir to the

⁴⁰ Imperial edicts (Hattı- Hümayûn) of Sultan Ahmet III are important sources to understand the practices of humoral theory in the Imperial palace. See in details, *Afyoncu, E. (2022), III. Ahmed'in Hatt-I Hümayunlarında Sultan ve Sağlık, Yeditepe Yayınevi*. In one of these edicts, Sultan Ahmed III complained of headaches and fever in his body. In the answer given to him, it was stated that Sultan's temperament was sanguin (demevî) but mixed with bile (safra). He was advised to stay away from sweets and fatty foods as a diet, as well as cherries, milk, and yoghurt, because they will increased bile (safra) (Afyoncu, p.65).

⁴¹ Taşköprülüzade Ahmet Efendi, who came from the ulema family known as Taşköprülüler, was the first known encyclopaedia writer of the Empire.

⁴² He was a famous physician of the time, who periodically served as chief physician from the reign of Mehmet the Conqueror to the reign of Yavuz Sultan Selim.

Islamic understanding of medicine, doctors attempted to heal their patients both in the imperial palace and in the hospitals of the empire, depending on the patient's nature and temperament. This was done following the regulated dietary regimes according to the patient needs. Within the framework of the Ottoman health system, chief physicians occupied the highest position in the hierarchy. Unquestionably, their most important duty was to ensure the Sultan's health and to prevent him from becoming ill.

Serin has pointed out that in addition to provide the Sultan preventative medical care, the chief physicians were also responsible for regulating a list of foods and beverages that was tailored to his specific dietary needs. According to Serin's account, the chief physicians performed their duties during the day in the pantry room, where the sultan's meals were prepared. Therefore, they were in charge of supervising the cooking of the meals (Serin, 2021, p.77). Additionally, she asserts that the office of pantry (*kiler-i amire*) provides the ingredients that were required by the chief physician to make medicines, healing pastes, and sherbets. She also mentions that “these ingredients were supplied the imperial cellars that serve the palace kitchens” (Serin, 2021, p.102). According to Süheyl Ünver, who examined the imperial kitchens accounts of the Sultan Mehmed the Conqueror, the daily meals and the expenses made for the medicinal preparations were also recorded in the same accounts. In one of these registers, although Ünver is not entirely sure about the physician's identity, he mentions a record of chief physician Kutbüddin Ahmed⁴³ asking for medicine for the Sultan and his relatives (Süheyl Ünver, p.70,1952). In

⁴³ He was one of the palace physicians of Mehmet the second.

this perspective both Ünver and Serin believe that food was an important component in maintaining one's health in the Ottoman palace tradition.

The Ottoman imperial palace has followed the theory of humors as a medical understanding. According to Arif Bilgin, dietary lists found in the imperial kitchen registers witnesses this (Bilgin, 2004, p.63). The production of drugs was a major ceremony that took place in the Ottoman palace. For instance, the production of pastes in the confectionary room, which occurred every spring, was also accompanied by an organization of a ceremony known as *od* or *öd* night (Kumbaracıoğlu, 1933, p.18). The pastes that were made during this night were stored in the *Başlala* tower (chef physician chamber) so that they could be distributed as necessary. Regarding the distribution of pastes, the palace's hierarchical structure is also very clear. Aside from the pastes that were kept as medicine, they were distributed first to the members of the dynasty, most notably to the Sultan, and then to the people of inner services (*Enderun*) and the people working in the palace, in varying amounts according to their status and rank (Bilgin, 2004, p.64).

One of the distinguishing features of the humoral theory is that food should be prepared also according to the seasons and to each season. Nil Sarı emphasizes that in the Ottoman Palace, meals were regulated by seasons because there was a widespread belief that eating well was essential to leading a healthy life. There was a strong connection between food and seasons. Sarı provides information that is extremely helpful in this regard. For instance, during the spring season, it was best to eat foods that were high in hematinic⁴⁴ content and easy on the digestive system, such as meat and sherbet. Whereas in the summer period, sour foods and cold

⁴⁴ Blood maker foods

vegetables should be eaten because bile starts to act during this season. Avoiding foods that are particularly spicy during summertime was essential. In addition, it was recommended not to eating dry and salty foods during the autumn season, Sarı mentions that during the winter, in order to prevent an increase in the phlegm, foods that contain garlic, onions, and spices should be consumed, and it should be avoided to consume to cold foods (Sarı,1982, p.247).

Nil Sarı in one of her articles makes a reference to a list of menus (*Fusûl-i erbaâya münâsib gıdâların beyân edildiği defter*)⁴⁵ that demonstrates how the Topkapı Palace's meals were arranged according to the change of the seasons (Sarı,1982). Stefanos Yerasimos states that it may be a document listing the daily meals of the palace aghas (Yerasimos, 2002). Upon examining the various culinary offerings presented in the list above, one can discern a relationship like the observations previously presented by Sarı regarding the relation between food and seasons. This list identifies spring and falls as transitional seasons. In the summer season, light soups, sour *kalyes*⁴⁶, cold vegetables were recommended. In the winter season, it is recommended to add spices to the dishes. Among the dishes eaten in all seasons are meat rice pilaf and chicken kebab are mentioned. According to her these dishes do not disturb the balance of the humors (Sarı,1982, p.247). At the end of the list, the dishes that will change in the winter season are listed. These dishes were: saffron and rice dessert (*zerde*), savoury pastry (*börek*), savoury pastry with chicken

⁴⁵ “*The book about foods suitable for all four seasons*”In the bibliography of the Nil Sarı article, it is stated that this menu was dated to the sixteenth century and was found in the Topkapı Palace archive.

⁴⁶ The name was given to the dishes that are prepared by adding a variety of fruits and vegetables to the meat that has been sautéed in fat with, hazelnuts, pistachios, dates, quinces, jujubes or citrus fruits, and so on.

(*tavuk böreği*), meatballs kebab (*köfte kebab*), aya meatball⁴⁷, *tâbe-i büryân*⁴⁸, kebab, dried salted beef (*pastırma*), stew (*yahni*), sautéed gourd (*kabak kavurma*), me'muniye⁴⁹, milk pudding (*muhallebi*), *mahmudiye*⁵⁰, zerde with milk (*sütlü zerde*), *zir büryan*⁵¹, porridge (*bulamaç*) (Sarı,1982, p.250).

3.4 Humoral Theory in the Ottoman Health Institutions

In the Islamic world of the medieval ages, *darüşşifas* (hospital in the Islamic world) played an important role in the broader healthcare system. They served as healing places for the general population in addition of being institutions in which Sultans and other members of the court carried out their charitable responsibilities for people. Véronique Pitchon states that hospitals in the medieval Arab world applied humoral theory where enough food was provided for every stage of a disease. Furthermore, Pitchon argues that a holistic and humanistic understanding of medicine was applied, including the architecture of these structures. “It was a very humanistic form of medicine applied within a specific architectural space that permitted diverse therapeutic strategies, but emphasized the serving of appropriate, appetizing and healthy food” (Pitchon, 2016, p.32).

There is no question that *darüşşifas* also hold a significant position within the Ottoman medical system. The essential function that nutrition plays in the healing process of patients naturally continues even in medical settings like hospitals. For example, the hospital of Bayezid II was one of the full-fledged hospitals that were

⁴⁷ Palm shape meatball.

⁴⁸ Kind of kebab. Roasted meat is cooked in the oven with eggplant, gourd, okra in an earthen pot.

⁴⁹ Finely sifted rice flour is cooked with oil, honey, milk and chicken breast with the addition of rose water and almonds. Kind of halva.

⁵⁰ Chicken meat is cut into small pieces and a little honey is added to the water and sweetened. Some almonds, apricots and *razaki* grapes are added to the chicken broth. Vermicelli kind of noodles are cooked then are added to the chicken.

⁵¹ It can be a kind of pit roasted lamb, but there was no sufficient information about it.

established in the Ottoman Empire. It was founded by Sultan Bayezid II toward the end of the 15th century in Edirne. The primary significance of diet to one's health was emphasized in this institution's founding document. In accordance with the charter, this medical facility would employ not one but two highly skilled chefs who would be responsible for preparing food in accordance with the directions given by the attending physicians. Nilüfer Gökçe points out that the meals and syrups prepared for patients in the hospital's kitchen area were those that adhere to special diets. This is because, according to certain documents, the hospital staff eats in the soup kitchen (Gökçe,1998, p.317). She believes that the fact that patients and staff eat in different areas of the facility serves as proof that special dietary considerations were given to each of the patients.

In a health system where the basis of being healthy is the easy digestion of food in the stomach, the concern of using herbs that will serve this purpose in medicine and cooking recipes comes to the fore. Among the countless plants used for this purpose since ancient times, sugar cane and rather granular or crystalline sugar produced by refining from it have come to the fore. This section will examine the place of sugar in humoral theory.

3.5 Sugar in The Humoral Theory

“Like an apothecary without sugar.”

Sugar is a special example of the fine line between food and health. The above-mentioned proverb, which expresses a kind of despair in medieval and early modern era in Europe, is possibly one of the few sentences that convey how precious and rare sugar is for humans (Mintz,1986, p.20). It is hard to believe that sugar was ever considered a viable treatment option for many medical situations. The literature

shows us as a luxury product, sugar has a variety of applications in the medical field. Ken Albala states that as far as is known, one of the earliest records of medical usage of sugar has been found in the *Charaka Samhita* which is one of the fundamental texts of *Ayurveda*.⁵² Sugarcane juice was believed to have phlegm-clearing, diuretic, and aphrodisiac properties, in addition to regulating body fluids. Albala states the sugar cane juice have several bodily benefits including increases the semen, purges the intestines and it is also helpful to excites phlegm (Albala, 2015, p.439).

In the medical texts written everywhere from the Indian peninsula to the Islamic world and Europe until modern eras, the beneficial effects that sugar and its certain types can have on a person's body was a common topic of discussion. The widespread perception that sugar has health benefits contributed to higher prices. For instance, during the plague epidemic, sugar prices rose among the *attars* in Mamluk Cairo because there was a belief that sugar had beneficial effects on the joints, throat, and lungs (Tsugitaka, 2015, p.112-113). Muhammed Querfelli discusses three major uses of sugar that emerged progressively during the Middle Ages. First, it is used for medicinal use, then its adaptation into the cuisine as a food item via dietetics, and finally its social use in the royal palaces of kings and princes. Querfelli asserts that the contributions of Nestorian physicians to medical schools in *Cundisabur*⁵³ since the 7th century led to significant advances in the field of pharmacy. In addition, during the second half of the 8th century, many Nestorian physicians went to Baghdad to serve as the personal physicians of the Abbasid caliphs. These physicians contributed to Galenic medicine by developing new forms of medicine, such as

⁵² An alternative medicine system that has its origins in ancient India.

⁵³ It is an ancient city located in present-day Iran's Khuzestan province. The importance of this city was that it contained an important medical center in the Middle Ages.

sugar-based syrup and jam. This process parallels the methods of refining sugar cane and the spread of sugar to the West (Querfelli, 2008, p.67).

It is widely known that the Hippocratic human body perception was incorporated into the medieval Islamic medicine. Therefore, when examining sugar's role in medicine, it should be remembered that the elements that sugar is thought to have had different functions for each organ of the body. Tsugitaka notes that Ibn al-Nafis (1210 C.E.-1288 C.E.)⁵⁴ was referred as the second Avicenna (980 C.E.-1037 C.E.)⁵⁵ during this period. In his book, Ibn al-Nafis examined the effects of sugar on organs in six sections, from the head to the digestive system. Upon examination of his analysis, it becomes evident that he presented information that aligns with the observations made by medieval physicians regarding the medicinal attributes of sugar. Ibn al-Nafis asserts that sugar's earthy properties bring it with a gentle and warm qualities. These gentle and cleansing properties of sugar make it an important component in the treatment of multiple health issues. For instance, the gentle and hot nature of the element earth is crucial for the brain (*dimâgh*), health. He presents that these properties aid in sugar's ascent to the brain. The rise of sugar to the brain protects the patient's humoral balance; if sugar does not rise to the brain, the brain's balance is disturbed, and it becomes hot (Tsugitaka, 2015, p.100). In accordance with these theories, sugar has a first degree of hotness and half as moisture as first degree because Ibn al-Nafis points out that:

An atom of sugar (*jawhar al-sukkar*) is comprised of elements of water (*mā'īya*), gentle hot earth (*al-arḍīyat al-laṭīfat al-hārira*), and air (*ha-wā'īya*). Sugar's predominant quality is its "hot" quality, due to its water element. Even if the water element is dominant, the heat properties of the earth and air

⁵⁴ He was a famous scientist of the medieval Arab world. He is famous for his work on the body's circulatory system.

⁵⁵ Ibn Sina who was famous a philosopher and a physician of the Medieval Arap world. In the West, he was known as Avicenna. His most influential work the Canon of Medicine (*Qanun fi al-tibb*).

elements overcome the cold property of the water element. This is because when the water element's properties arise, but there is little water present, the properties of the air element overtake those of the water element. When boiled sugar congeals, its water element properties naturally recede (Tsugitaka, 2015, p.99).

Sugar was a part of pre-modern Islamic medical texts as well as everyday" life because it also was an essential component in many home-brewed medicinal compounds. David Waines notes that medicinal powders, stomach medicines, and electuaries contained sugar and it helps to facilitate the absorption of laxative and non-laxative drugs. Firstly, sugar mitigated the bitterness of medications. Additionally, it made mixtures softer and smoother, and most importantly, it assisted the body in accepting the medication (Waines, 2011 p. 189). For the Galenic theory, while jams, candies, and sugar-based foods were recommended for people with cold temperaments and the elderly, they were not recommended for young children and teenagers due to their hot temperaments. In addition, foods sweetened with sugar, honey, or both (*halva*) were suggested, as it was believed that sick and recovering individuals required light and soft foods. These individuals needed to regain their appetite and relief (Waines, 2011, p.70). Querfelli points out that sugar has been utilized as a drug's active ingredient, and as a preservative. Numerous compound medications contained sugar. Sugar is recommended by treatment handbooks for sweetening and enhancing the absorption of compounds. It appears to be associated with numerous combinations, liquids being the most significant. As stated by the Querfelli, in the liquid mixtures have begun to replace honey because sugar can be used in multiple ways and is easier to preserve (Querfelli, 2008, p.68). Waines explains his view of sugar and honey with a quotation from the tenth-century medical writer, Al-Tamimi who states about sugar: "although not from the manna falling

from the sky, honey is its full brother, equivalent and partner” (Waines, 2011, p. 189).

The Canon of Medicine (Qanun fi al-tibb) by Avicenna describes the medicinal properties of sugar in the same manner. According to him, sugarcane (*kasabü's-sukkar*) has many emollient qualities. The cold one substance is cane sugar. It is the gentlest. All sugars within the first degree are hot and moist. Old sugar is dry to the first degree; their moisture evaporates over time, and the older (less fresh) they are, the drier they are. Sugar, softener, cleaner, and Suleimani sugar are all softeners, but the mixture of *faniz*⁵⁶ and honey is particularly effective. Like honey's cleansing properties, sugar also has a cleansing effect. Sugar becomes softer with age. Sugar, such as gum made from sugar cane, makes the eyes shine. It softens and relieves the breast's rigidity. While according to Avicenna, sugar is beneficial for the stomach, but it is harmful because it stimulates the production of bile. Sugar relieves bodily stiffness. It reduces thirst more than honey. This is particularly true for aged sugar. The old sugar thickens the blood and eliminates the stomach's phlegm. Sugarcane induces vomiting. Sugar causes diarrhea, particularly when the top of the sugar cane is salted. Soleimani sugar and red sugar are the most emollient, occasionally cause gas, and, when combined with almond oil, alleviate severe abdominal pain (Kahya, 2009, p, 452-453).

In the context of sugar consumption and its influences on the human body, Sato explains that the earth element has gentleness, thus, consumption of sugar will provide the person with this quality, while a disproportionate consumption of sugar

⁵⁶ *Faniz* is a kind of cane sugar. Kahya, E. (2009). *El-Kânûn Fi't-Tıbb*. Vol:2 Atatürk Kültür Merkezi.p.656

would cause headaches (Tsugitaka,2015 p.101). In addition, eye problems were traditionally treated with sugar. The eye becomes drier because of sugar's ability to absorb moisture. It is also used to make a powder medicine for eyelid trachoma. Sugar combined with antimony is more effective for eye inflammations. Sugar has a gentle nature and a cleansing effect. Additionally, it readily dissolves in liquids. Due to its ability to penetrate easily, sugar is effective on the organs in the chest. It is effective against hoarseness of the throat (*buhhat al-sawt*) when consumed with hot water. Sugar with borage (*lisân- sevr*) juice has a positive effect on cough (*su 'âl*). As Ibn al-Nafis notes, combining sugar and barley water is also beneficial (Tsugitaka,2015, p.100-101-102).

Furthermore, he shows numerous ailments in which sugar is beneficial in the treatment. According to that:

Sugar reduces hemoptysis (nafth, the coughing up of blood, etc.), regulates breathing (nafas), and is effective against breathing difficulties ('usr al-nafas), asthma (rabw), and shortness of breath (nafas al-intişâb). It is also effective against pleurisy (dhât al-janb) and pneumonia (dhât al-ri'a), expels pus from the chest (şadr), and reduces inflammations in the chest and lungs (ri'a). It is also effective against chest ailments and hoarseness of voice (şawt) (Tsugitaka, 2015, p.102).

Sugar is an immensely effective substance in urine. It is significant to note that, its effect increases with various plant and food constituents. For instance, consuming butter and sugar together is beneficial for urinary retention and consuming sugar with fresh butter aids in stomach relaxation. According to him, *fanidh* sugar is effective for this type of treatment. Red sugar (*sükkar ahmar*) [raw sugar] is another beneficial sugar for the body. This sugar is used for both enemas (*ihitiqân*). It is one of the most effective types and is gentle on the body. According to him, this strength derives from the cleansing properties of red sugar. This is also true of *sükkar al-nabât* a type of rock candy (nebat,nöbet şekerî). In addition to sugar varieties, sugar cane itself has

medicinal applications. Sugarcane crystals are beneficial for the stomach, eye disease and cold. Ibn al-Nafis says; however, excessive consumption of sugarcane will cause stomach distention. In contrast, sugar is frequently combined with almond oil. It effectively treats flatulence and colic (Tsugitaka, 2015, p.101-102-103). What is more, the gentle and cleansing qualities of sugar make it beneficial to the stomach. It also clears phlegm. However, if the bile increases, the sugar causes bitterness in the stomach because of the gentle and warm sweetness of the sugar. Since it is assimilated into the blood, it is partially absorbed by the digestive organs. Sugar is also beneficial for the liver because it clears and removes obstructions. However, because sugar is a hot quality, it can become bitter and could also cause liver damage. In addition, he asserts that so-called “old sugar” is extremely advantageous for the stomach and phlegm (Tsugitaka, 2015).

The Byzantine medicinal literature is another clear example of how the Islamic understanding of medicine has influenced numerous cultures. In his book, Petros Bouras-Vallianatos discusses the status and growing significance of sugar and sugar-based mixture in early Byzantine medical texts and practices. One of the primary reasons of the popularity of is that it is available throughout the year. It has improved homogeneity and fluidity, and it is more durable. According to him, sugar is purer and more protective than honey (Bouras-Vallianatos, p.164). Sugar was also a luxury food item in the Byzantine Empire. He remarks that in the 12th century, the Pantokrator monastery in Constantinople had sugar as part of its *xenōn* supplies (Bouras-Vallianatos, p.166). According to him, “the earliest reference to a sugar-based potion in a medical context in Byzantine literature is found in *Hippiatrica*”⁵⁷

⁵⁷ It is a Byzantine compilation created by compiling ancient Greek texts about horse care and health.

(Bouras-Vallianatos, p.165). Bouras-Vallianatos states that the remarkable work on sugar and its medicinal uses belongs to Symeon Seth (C.E. 1035-C.E.1110)⁵⁸. In his work on *the Capacities of Foodstuffs*, we come across many sugar-based products. (Bouras-Vallianatos, p.165-166) This text also contains the earliest mention of *oxysakchar*, a sugar-vinegar mixture. As per him, this mixture is comparable to *oxymeli*, a sugar-based potion that is well-known in Byzantine and Greek medical literature. Also, Bouras-Vallianatos mentions, Seth also discusses the preparation of water lily, and balm as *julep* without any details in his writings (Bouras-Vallianatos, p.166). However, the medical handbook *Ephodia tou Apodmoutos* contains the first consistent references to sugar's medicinal applications and other oriental preparations. He states that in the period's medical prescriptions, writers such as *Chioniades* sought to establish sugar's place in contemporary pharmacology. Bouras-Vallianatos also encounters sugar-based mixtures more frequently in the period works of John than in the works of other authors. However, he draws attention to the fact that honey continues to appear frequently on the lists. In this context, it is worth noting that the terms *julep and syrup* appear in John's and other texts mention as "taken from the barbarians". As seen by Bouras-Vallianatos, "the term "barbarians" emphasizes the Arabic origin of *julep* and syrup" (Bouras-Vallianatos, p.166-167).

The understanding of medicine within the Galenic-Islamic framework underwent significant development during the seventeenth century due to advancements in medical and pharmacological research. The humoral theory has faced significant criticism regarding its knowledge and practices. Sugar also faced criticism, and despite its scarcity during the Middle Ages, its usage as a medicinal

⁵⁸ He was Byzantine scientist and translator.

supplement significantly declined. David Gentilcore asserts that sugar was widely regarded as a highly desirable food source during the early sixteenth century. However, as the seventeenth century unfolded, medical professionals asserted that sugar consumption led to dental discoloration and digestive problems, such as the formation of obstructions (Gentilcore, 2016). Notably, the plant, which has been historically utilized as possessing purifying properties, exhibits a lack of substantial advantages for the digestive system, thereby exemplifying irony.

3.6 Şirvani's Cookbook and its Relationship between Food and Health

The cookbook of Muhammad bin Mahmud Şirvani, who lived and worked as a physician in the latter half of the 14th century and the first half of the 15th century, is a significant source that describes how the relationship between food and health was in the Ottoman era. During his life, Şirvani, wrote manuscripts in both Turkish and Arabic about food, medicine, precious stones, and pharmacies (Argunşah and Çakır, 2005, p.24). He translated *al-Baghdadi's Kitâb al-tabîkh (The Book of Cookery)*⁵⁹ written in the 13th century into Turkish and added new recipes to it⁶⁰. According to Günay Kut, Şirvani contributed seventy-seven additional recipes at the end of this book. On the other hand, Kut argues that Şirvani included the recipes without subjecting them to any kind of classification because he was only interested in providing recipes that were already in widespread use (Kut, 2021, p.80).

The cookbook of *Şirvani* is the first and only known cookbook inherited from the early modern period in Ottoman era. According to Kut, the book contains ninety-

⁵⁹ Günay Kut states that this work was written by Muhammed bin Hasan bin Muhammed bin el-Kerim el-Baghdadi in 1226 and that the only known copy is registered in Suleymaniye Library, Hagia Sophia Section 3710.

⁶⁰ The beginning and the last page of this cookbook are missing, and the only copy is currently in the Beyazıt State Library. Before the 17 August 1999 earthquake, the Ali Emiri Manuscripts of the Istanbul Fatih-Millet Library were registered with the number 143.

seven different recipes, including seventeen different pickle recipes, fifteen different bread recipes, sixteen different halva recipes, and seventeen different types of *kadaif*⁶¹ recipes. Kut asserts that the Ottomans were used to prepare dishes such as *herise*⁶², *kalye*, pickles (*turşular*), and desserts (*tatlılar*) (Kut, 2021, p.90). This cookbook contains a significant number of dishes inherited from medieval Arab cuisine. However, it does not show that this book only includes Arabic dishes and has nothing to do with the Ottoman cuisine of the period. Indeed, Stefanos Yerasimos holds a similar view. He argues that such a one-sided comparison cannot be made based on both the recipes translated from Baghdadi's work and the recipes added by Şirvani himself. Both the palace accounting registers from the period of Mehmet the Second and other meal lists that belong to the following years prove that these dishes have already been cooked in the Ottoman palace (Yerasimos, 2002). Furthermore, in this regard, Argunşah and Çakır point out that the cultural interaction between the medieval Arab and the Ottoman worlds from the 13th to the 15th centuries was important. According to them, at the time when Baghdadi wrote his cookbook in the 13th century, the Turkish population had a considerable presence in Baghdad. Therefore, although the book was written in Arabic, Argunşah, and Çakır claim that the cookbook is not utterly distant from Ottoman culture and shows the interaction between the two cultures (Argunşah & Çakır, 2005, p.45).

Şirvani's cookbook provides us detailed recipes and some notes about their benefits for human health. This cookbook sheds light on the imprecise boundaries that separated the realms of cooking and medicine during the period in question. In

⁶¹ Shredded pastry soaked in syrup.

⁶² Keşkek, a dish made by beating boiled meat and wheat until they become kind of porridge.

addition, the fact that Şirvani was a physician and that he wrote manuscript on medicine in his own period strengthens our claim. Şirvani, in his book, provides descriptions that are in line with the therapeutic practices that are associated with humoral theory. He states at the introduction of his cookbook that he sees that human beings need eight tastes in life. According to him, these tastes are eating, drinking, wearing, getting married, smelling, touching, speaking, and hearing. But he says that the most important of them is to eat and drink because our body will not be refreshed without them (Şirvani, p.143). In accordance with the period's medical understanding, the recipes in the cookbook and their benefits are based on regulating the digestive system of the individual. Furthermore, when examining the advantages of prescription medications, the objective is to help improve bodily strength, augment sexual power, and make the stomach comfortable. However, it should be remembered that each recipe should be specific to the person's temperament and illness.

When describing a recipe, he also specifies which personality type will be most suitable for the preparation of the dish in question. For example, the recipes of a dish called *zirbac aşı*⁶³, is given in the first part of the book, is in the section where sour dishes are explained. This dish is recommended for people with a hot temperament. Şirvani recommends this dish to those with stomach aches and those with a poor appetite. He also states that it is suitable for fatigue in patients with lung diseases,

⁶³ A type of meat stew with sugar or honey, cinnamon, chickpeas, and almonds with saffron. Issı mizâçlılara ve ma' desı ağrıyanlara ve iştihâları fâsîd olanlara ve ma' delerinüñ dibinde ve cigerlerinde südde ve ağrı bulunanlara ve sü' -ı kınye ve istîşkâsı olanlara, yaraķân ve ıalâķ olanlara be-ğâyet münâsib ğıdâdur ve daķı ğıbb-ı hâlişe daķı fâyide eder, ısıtması yeynildükden şöñra ve gönül yeyecek istedikden şöñra. p.148

cirrhosis, jaundice, and spleen. He says that another dish called *tuffahiye*⁶⁴ is good for melancholic people. In addition, Şirvani says that this dish strengthens the heart and stomach, is easily digested, and prevents nausea, and finally recommends *tuffahiye* to those with heart problems. *Magmume aşı*⁶⁵ which is recommended to people with a moist and sanguine temperament and to young people, is highly beneficial to the human body. This dish makes the phlegm and sweat out of the body and prevents steam from going to the brain. Şirvani says that another dish called *ruhamiye*⁶⁶, is suitable for people who have dry temperament and thin, especially when eaten with sugar. He also says that *ruhamiye* strengthens the brain, makes the body fat, and increases semen and sexual power. Interestingly, Şirvani, who gives soup recipe (*çorba aşı*)⁶⁷, says that this recipe is suitable for people of all temperaments. According to him, soup strengthens the body, brain, heart, liver, nerves, and kidneys. It is also suitable for the stomach because it removes harmful bile and gases. It is good for constipation and while it relieves stiffness in the body, it also beautifies the face. He recommended this soup for heart health (Şirvani, 2005).

Şirvani's cookbook is the only book that it is known from the early modern period. The parallelism between the medical manuscripts of the 14th and 15th

⁶⁴ A kind of stew made with pieces of mutton, onions, coriander, spices, sour apple juice and rose water. “Yüregi ve ma‘deyi kavî eder ve ma‘deden tez hâzm olur ve hem kusmaqlık giderür ve mâlihûlyâ issine ve ıssı hafağan issine be-ğâyet münâsib gıdâdur.”p.150

⁶⁵ A kind of stew made with mutton, tail fat, eggplant, onions and various spices. ve bunuñ fâyidesi oldur kim, tez hâzm olur ve bedene şâlih gıdâ verür ve iştihâ açar ve ma‘deden tez ener, yüregi ve ma‘deyi kavî eder ve hem sevindürür ve balğamları ve ruğubetleri taḥlîl eder, buḥârı dimâğa çıkmakdan men‘ eder ve bevli endürür ve aḡulu yeyeceklerüñ zararın dimâğdan men‘ eder, merṭûb mizâclulara ve demevî mizâclulara ve yigitlere be-ğâyet münâsibdür.p.155

⁶⁶ First type is with milk, rice, nut-sized meatballs, tail fat and cinnamon; The second type is a kind of dish made with cinnamon, mastic and hazelnut-sized meatballs. Ve bunuñ fâyidesi oldur kim, dimâği kavî eder ve bedeni semridür ve menî arturur ve cimâ‘a kuvvet verür ve yâbis mizâclulara ve arıqlara be-ğâyet münâsibdür,diledi kim şekerile bile yeyeler.p.162

⁶⁷ Ve bunuñ fâyidesi oldur kim, bedeni ve dimâği ve yüregi ve cigeri ve siñirleri ve böğregi kavî eder ve ma‘dedegi yaramaz hıltları ve yelleri taḥlîl eder, süddeleri açar, menî arturur,beñzi gökçek eder ve yürekden aḡulu yeyeceklerüñ zararın def‘ eder,cemi‘ mizâclara muvâfiḡdur.p.165

centuries - that constitute the third and fourth parts of the thesis- and the Şirvani cookbook in the diagnosis and treatment recommendations, is very valuable to demonstrate the relationship between food and health in the Ottoman culture.

3.7 Conclusion

The humoral theory, a prevailing belief until the 19th century, suggested a direct correlation between dietary intake and an individual's physical health. In this part of the thesis, I summarized how the humoral theory was interpreted within the Ottoman state's medical system during 14th and 15th century. I tried to figure out how the understanding of food and health, which is unquestionably the most important component of humoral theory, was applied in Ottoman medicine. Because of the properties associated with sugar as a commodity for hundreds of years, this particular product has the potential to provide insights into the humoral theory and its related practices. Sugar, a rare and expensive commodity, has been one of the products that apothecaries and *attars* have earned high profits. It which turns into a gastronomic product over time from a medical product, is located at the intersection of gastronomy and medicine. The texts in which the famous physicians of the Middle Ages describe the medicinal properties of sugar also shed light on the subject, which I will discuss in the third and fourth parts of the thesis based on the Ottoman medical texts. This will enable us to understand that the gastronomic values that I put in the dessert category today were presented as a source of healing by the physicians at that period.

As I explained above, the duty of physicians since ancient times has been to follow the "diet" of their patients and to create prescriptions suitable for their nature. The principal practitioners of the humoral theory were physicians. As Lewicka

mentioned at the beginning of this text, a limited number of people had access to written sources. With the treatments they were applying humoral theory and ensuring that this information can be reached to the lowest part of the society. Due to the requirement of their work, Ottoman physicians were responsible also of healing the palace residents in the imperial kitchens and the imperial hospital pharmacy with healing both the palace people and ordinary people tried to perform their duties as physicians both in the palace kitchen and the hospital pharmacy.

Although I focus on the 14th and 15th centuries in my thesis, the continuation of humoral theory until approximately the 19th century will prevent food from being seen as just a pleasure and continued to be seen as a source of healing. For example, Serin states that a small amount of food was given to patients in severe conditions, while meat broth and bread were preferred in the following centuries. For her, soup was highly preferred for such occasions. In addition, she also states that lamb meat was always available for patient meals (Serin, 2021, p.96). For instance, *Albertus Bobovius*, also known as *Ali Ufkî Bey*, is a source of information regarding the manners, customs, and practices prevalent during seventeenth-century palace life. According to him, in Edirne Palace, patients ate a meal prepared with meat broth containing tiny pieces of dough resembling Italian noodle soup and served as a meal during fasting. He said patients at the Great Palace (*also known as the Topkapı Palace*) were given lean chicken and broth to eat (Bobovius, p.48). A good example of the relationship between health and food in the *Topkapı* Palace comes from the writings of *Üsküdarî Abdullah Efendi*⁶⁸ (1630?-1701 or 1702 C.E.). In his work

⁶⁸ An Ottoman historian who lived in the eighteenth century, whose most famous work is *Vâkıât-ı Rûzmerre*.

*Vâkı'ât-ı Ruzmerre*⁶⁹, it is stated that there is a cook (*aşçı*) in each patient room of the hospital in Enderun. He states that each room in the inner services (*Enderun*) had a cook. One of the travelers who lived during the 17th century, Evliya Çelebi, also discusses his thoughts on the connection between nutrition and physical well-being. While he was in Edirne, he also went to the hospital that had been built by Bayezid II, and he provided very specific descriptions of it. Evliya Çelebi reports that the patients receive food three times per day, depending on the severity of their health conditions (Evliya Çelebi, p.263).

⁶⁹ It is a four-volume work spanning the years 1688 to 1693, detailing Ottoman organizational structure, significant events of the time period, and presenting sections on daily life.

CHAPTER 4

SUGAR IN THE OTTOMAN MEDICAL MANUSCRIPTS

In the second and third chapters of the thesis, I discussed the history of sugar and its position within the humoral theory specifically in Ottoman culture. In this chapter, I will attempt more in-depth analysis of the medicinal usage of sugar in four Ottoman manuscripts from the 14th and 15th centuries. How was the sugar described and perceived in these manuscripts? How was it used in the recipes and sugar was used with what kind of culinary preparations? Sugar was used in which treatments? These are the questions that it is aimed to answer in this chapter.

Sugar was one of the raw materials used in producing many medicines and confectionaries in the medieval world. The primary use of sugar was to reduce the unpleasant taste of drug compounds. Furthermore, sugar played an important role in the process when a compound needed to be thickened. It was believed that the drug could penetrate the body more effectively when sugar was involved. In conclusion, sugar was performed in the preservation process as well. Sugar, with all these properties, has become an integral part of a complicated process. Nearly all the uses of sugar that were discussed earlier were also valid in the Ottoman medical practice. The expenses made for medicine and materials in the hospitals located in Ottoman waqf witness the use of sugar in medication. For example, the foundation of Bayezid II hospital listed the expenses made for sugar in 1489 and 1490. On the list of ingredients, two different kinds of sugar particularly stand out: *sükkeri- i nebat- i haricî* and *sükkeri- i Efrencî* (European sugar) (Gökçe, 1998, p.318). Sugar was additionally identified in the records that cover the years 1489 and 1490 and show the expense list of the hospital that was housed in the Fatih Mosque complex.

According to the list, *sükker-i efrenci* (European sugar) was bought for the hospital (Barkan,1963, p.329).

The Ottomans had a tradition in which the understanding of humoral medicine was applied, much like their contemporaries and the civilizations that came before them. The fact that records of sugar were in these two major hospitals of the Ottoman Empire is further evidence of the vital role that sugar played in the Ottoman pharmacology system. In addition, as mentioned in the preceding sections, sugar holds a unique place in humoral theory and can be utilized in various ways. Parallelism can also be seen in the usage patterns in these hospital records and Ottoman manuscripts.

4.1 Ottoman medical manuscripts literature in the 14th and 15th centuries

Anatolia hosted many manuscripts on medicine that cover the protection of health since the 14th century. While some of these works were direct translations, others were compiled from the works of multiple authors, and others were written directly by one author. *Tuhfe-i Mübârizî* is recognized as the first medical text written in Turkish in the 13th century (Önler, 2019). Hoca Bereket wrote it, but its exact date is unknown. The first known translated work is *Müfredât-ı İbn-i Baytar* (Adıvar,1970). The first medical manuscript written in Turkish whose date of writing is known called as *Edviye-i Müfredde*. This manuscript is the first medical manuscript that I examined in this thesis. In addition, it should be remembered that the works written in this period took place under the patronage of the *beg*⁷⁰ of the period. These texts also provide us the knowledge of the vegetation, zoology, and pharmacology (Yıldız, 2019).

⁷⁰ The governor of a small state.

When going through various medical manuscripts and monographs, it was possible to find sugar in many of the different recipes and drug compounds. To understand the use of sugar in the Ottoman medicinal system in the 14th and 15th centuries, I will analyze four medical manuscripts: *Edviye-i Müfrede*, *Müntehab-şifâ*, *Hazâinü's-Saâdât* and *Yâdigâr*.

4.2 *Edviye-i Müfrede* by Ishak bin Murad

Edviye-i Müfrede was written by Ishak bin Murad in 1387. There are six copies which are *Paris*, *Malatya*, *Bursa*, *Topkapı*, *Ali Emiri* and *Gotha* copies. Mustafa Canpolat and Zafer Önler suggests that the most accurate version of *Edviye-i Müfrede* can be found at Paris Bibliothèque nationale. It is essential to take note of the fact that *Edviye-i Müfrede* and *Müntahab-ı Şifâ* are both found in the same copy of Paris (Önler and Canpolat, 2016, p.9).

Edviye-i Müfrede could be translated as pharmaceutical drugs. The work is constituted of four distinct parts, or sections. The first part of the chapter provides an alphabetical listing of the plants, foods, beverages, and other substances that can be used therapeutically. The second part of this chapter looks at the human body as well as various diseases. In the third chapter, the compositions of a variety of drugs are provided, along with sections taken from *Zahire-i Harezmahi*⁷¹ and *Avicenna's the canon of medicine* (Adıvar, p.20). The final section is a dictionary that includes terms in Arabic, Persian, and Turkish (Önler, Canpolat, 2016, p.13). Ishak bin Murad is the author of the book, but there is not much information available about him; it is well known that he was a physician during the Sultan Bayezid the first (1360 C.E.-1403

⁷¹ It is the first known Persian medicine book written by the famous physician of the Harzemshah period, Cürcânî.

C.E.) period and that he was active during that time, and he is a native of city of *Aydın*.⁷²

Edviye-i Müfrede contains a wealth of information pertaining to the therapeutic uses of sugar. In the part of the chapter where he listed the plants and Ishak bin Murad discussed the advantages of sugar as well as a few different kinds of sugar.⁷³ He points out that, when the sugar is getting older, its effects become stronger. Ishak bin Murad determines that the property of sugar that distinguishes it is that it is warm. It enables the veins and nerves to receive the benefits of sugar herbs that have been extracted from the plant. Additionally, red sugar (*sükkar-ı ahmar, kırmızı şeker*) loosens the grips, soothes the nerves, expels the phlegm, and to help prevent gas. He also discussed the benefits of solid white sugar (*tabar zad sugar*), claims that the humour of this sugar is not as hot. Sugar makes the chest more pliable, gets rid of the breast's toughness and bulk, strengthens the stomach, and it is appropriate for stiffness anywhere in the body. When consumed raw, red sugar causes thirst; however, once it is cooked and foamed, it no longer causes thirst. Sugar, in any form, is beneficial for jaundice (M25b/P24b). The sugar substance mentioned in the *Edviye-i Müfrede* and the sugar definitions given in *Müntahab-ı Şifâ* are the same except of minor differences. One reason might be that the reference books they used to write their works were the same or similar.

⁷² Aydın is a city located in the Aegean region of Turkey.

⁷³ şeker, anuñ ağı i' tidāl ile issidür ve şeker cemī' otlaruñ badrağasıdır. Kaçan ki otları şekerile içeler cemī' endāmlara degirür ve tamlara ve şıñirlere iledür, ulaşıdurur. Ve kızıl şeker issidür, yelleri sürer, çıkarur ve balğamı göyündürür, bişürür ve kulınc açar ve şıñirleri berkidür ve şeker eskidükçe kuvveti artuğ olur. Ve şeker-i tabar zad issiliği yeyniredür. Ve gögsi yumşadur, katılığın ve iriligin giderür, ma' deye kuvvet verür ve süddeleri açar. Bādām yağıyla içlerse ishāl eder. Ve kızıl şeker şuşalık getirür, bişürüp kefin alıcağ şuşatmaz. Ve aq şeker dükeliinden yegrekdür ve dükeli şayrılığa yarar. p.37

One of the notable issues in the manuscript is the recommendation of sugar with certain nutrients. For instance, you can treat your diarrheal if you consume sugar with almond oil as a beverage. The combined use of sugar and almonds is mentioned in certain parts of the manuscript. For example, Ishak bin Murad prescribes almond sugar (*badem şekeri*) in order to reduce the harms of cannabis sativa (*kenevir*) (Ishak bin Murad, m37a)⁷⁴.

Sugar is frequently encountered in medical texts with the *Viola tricolor* (benefşe, menekşe) plant. Ishak bin Murad describes the nature of this plant as cold and wet. It states that if three drachms (*dirham*)⁷⁵ are drunk, the stomach will be purified from bile and it is recommended to drink it with sugar, and viola trichomes are good on the blisters formed in the body (Ishak bin Murad, M12b)⁷⁶.

⁷⁴ kenevir ki fârsice şehdânedür, issidür, kûrudur, gevdeden yelleri sürer ve cimâ' şehvetin getirür ve koyu balğamları gevdeden arıdur ve beli issi dutar ve şovukdan kulağ ağrısına ki eskimiş ola, anuñ yağın tãnzursalar hoş ola. Ve anuñ haddi iki diremden üç direme degindür, gec siñer ve ma' deye ziyân eder, çok yeyicek baş ağrıdur ve men'yi kûrudur ve göz tûndurur ıslâhı şeker-i bādām, haşhâş sikengübîiledür p.47 Cannabis Sativa, commonly known as *kenevir* in Turkish, is a plant species that belongs to the Cannabaceae family. The plant in question is a perennial herbaceous species that reaches a height ranging from 50 to 350 centimetres. The cultivation of this plant is primarily undertaken for the purpose of obtaining either fiber or seeds. The drug known as *esrar* is derived from the leaves and flowers of the plant (Baytop, 2015, p.170). Marshall Hodgson points out that the popularity of mood-altering substance in the Islamic world increased with the Mongolian invasion (Hodgson, 1974, p. 568-569). In Ottoman society, *esrar* served as a medicine and a mood-altering substance that people from all social classes used. See in detail: Gezer, O. (2022), *Hayaller Sancağının Kuru Sarhoşları: Osmanlılarda Esrar ve Esrarkeşler, İletişim Yayınları*. As the effects of *esrar* (cannabis sativa) diminish, individuals may experience the emergence of symptoms associated with both physical and mental fatigue. This condition, precipitated by a decline in blood glucose levels, was attempted to be mitigated by consuming foods high in sugar (Gezer, 2022, p. 129). See also: Paulina Lewicka's *Food and Foodways of Medieval Cairenes: Aspects of Life in an Islamic Metropolis of the Eastern Mediterranean*. Another example of the demand for sweet foods after the use of mood-altering subject is medieval Cairo. Hashish users often crave sweets after using the hashish, leading to a tradition of following it with a confectionery session in medieval Cairo, satiating drug-induced hunger (Lewicka, 2011, p.314).

⁷⁵ An old unit of measure of weight equal to four hundredths of an okka (3.2075 g.)

⁷⁶ Benefşe; şovukdur, yaşdur. Üç direm andan içseler ma' deyi şafrâdan arıdur, çıkarur. Şekerile içeler ve issi şişlere yaķu etseler giderür.p.25

4.3 *Müntehab- ı Şifa* by Celalüddin Hızır bin Aliyü'l Hattab

The book referred to as *Müntehab-şifâ* was written by *Celaluddin Hızır bin Aliyu'l Hattab* or Hacı Paşa is one of his more well-known names. It is common knowledge that he lived in the 14th century. His significant writings were almost entirely composed in the Arabic language. This work, written by Hacı Paşa in pure Turkish, it is one of the best-known of the first Turkish medical books written (Bayat, 2016, p.252). *Müntahab-ı Şifâ* is composed of translations of Celalüddin Hızır bin Aliyü'l Hattab's other book written in Arabic the book about the healing of diseases and the treatment of pain (*Şifâ 'ü'l-Eskam and Devâü'l-Âlâm*) (Bayat, 2016).

The book constitutes of three chapters called "bahş", which are essentially large sections. These "bahş" are further subdivided amongst themselves into different parts called "bab." The first chapter of the book is divided into 17 parts. In this part, Hacı Paşa first greets God and the Prophet, as it is customary. Then, in his own words, he begins to explain the science of medicine and explain the teaching of four humors. Then he explains the details of pulse and urinalysis. Pulse (*nabız*) and urinalysis (*kârûre*) were basic information for diagnosing diseases in the pre-and early modern periods. In the second chapter, Hacı Paşa offers suggestions on topics such as food knowledge, water, movement, sleep, vomiting, bath procedures, sexuality, bloodletting, and depression. Finally, in the third chapter, Hacı Paşa explains a different disease in each item and presents specific prescriptions against diseases. This part is gathered under approximately 54 separate headings. In the remaining seven parts, he talks about making medicine.

In the book, there are a total of seven distinct types of drug preparations: pastes (*macunlar*), medicines prepared by boiling in a liquid (*matbuhlar*), oilments

(*yakılar, and merhemler*), pastes (*lu'uk*), medicinal powders (*suhufklar*), sherbets (*şarablar şuruplar*), pills (*haplar and kurslar*). There are currently eight copies of *Müntehab-şifa* that have been carefully preserved. The copies that are in the best condition can be found in the Malatya General Library and the National Library of Paris, respectively. The Malatya Copy is what this text is based on, so the leaf numbers and line numbers are given in accordance with that. Only the leaf numbers for the Paris copy are displayed in the text.

Sugar is not included in every recipe in the manuscript. It is used to thicken the medicinal mixture to make the taste better. But this does not mean that sugar is used solely for this purpose. Some parts of the text contain information about cane sugar itself. The medicinal benefits of sugar are discussed at length in *Müntahab-i Şifâ*. The manuscript provides insights into various types of sugar, including solid white sugar (*tabar zad*), rock candy (*nebat,nöbet şeker*i), fanidh (*pennet or cheese,stick sugar*), *suleiman sugar*, red sugar, and white sugar. For example, Suleiman sugar is used in a recipe for sciatic pain, which women suffer a lot, as Hacı Paşa puts it (M114b)⁷⁷. In a recipe for headaches, if you have this pain because your body has a lot of blood, there is the statement that you must drink quince seed *lu'ab* with rock candy (*nebat,nöbet şeker*i) (M36a)⁷⁸.

Hacı Paşa describes the various types of sugar in the most remarkable detail in the section where he discusses the benefits associated with them. The nature of sugar

⁷⁷ ki nıkrise ve 'rku'n-nisāya müfiddür aq sürincān on direm şeker-i süleymānī beş direm za' firān bir deng mecmū' in yumşaq dögeler qarışduralar bir direm şovuk şuyıla isti' māl edeler. p.160

⁷⁸ qan gālib olanuñ " ilācı budur ki baş tamarından tezcek qan alalar iki nev' inde daḥı ḥummā-yı şafrāvīye deyecegümüz ve şudā'-ı ḥārā dedigümüz " ilācı edeler ṭabī' atı dāyima 13/ şāfila ya ḥuḳne-i mutavassīṭıla telyīn edeler qabz olmağa qomayalar her-dem başına qabaq çekürdegi yağın ve benefşe ve nīlüfer ve ṭatlu bādām yağn dürteler ayva çekürdegi lu' ābın nebāt sükkerile becid içüreler p.70

is usually accepted as hot and moist. But, Hacı Paşa mentions that there are differences between the old and the new sugar:

If the sugar is new, its nature is warm and moist; if the sugar is old, its nature is dry and hot. Sugar increases the number amount of semen in the body and opens blockages in various organs. If sugar and herbs are drunk together, they will reach all organs and nerves. Red sugar prevents gas formation in the body, cooks the phlegm, opens the culverts, and is suitable for the nerves. The old sugar, the stronger it becomes and softens the breast, relieving stiffness. If consumed with almond oil, it will cause diarrhea. Red sugar will make a person thirsty, but if its foam is removed, it will not make the person thirsty. White sugar is better than all sugars and is beneficial for diseases. The nature of cane sugar is like new sugar, but it causes gas in the body (M27b).⁷⁹

Hacı Paşa, who also gives some information about sugar cane, states that sugar cane is good for the throat size. However, this does not give any information about how the cane is used. If it is considered that sugarcane juice is also used medicinally, Hacı Pasha may most likely be talking about the benefits of cane juice. (M68a)⁸⁰ One of the areas where these types of sugar are used in *Müntahab-ı Şifâ* is pill making. In a pill recipe for cough, rock candy (nebat,nöbet şekeri), and quince seed *lu'ab* are kneaded with sweet almond oil. solid white sugar (*tabar zad*) sugar was used in the last part of the same recipe in a recipe to stop diarrhea.⁸¹

⁷⁹ Sükker yeşisi hâr u raḥbdür sükker eskisi hâr u yâbisdür öksürüğe müfiddür menîyi arturur ve südde yolların açar kaçan otları şekkerile içseler iltür cemî' endâmlara degürür ve siñirlere ulaştırur ve kızıl şeker yelleri sürer ve balgamı bişürür ve göyündürür ve kulunc açar ve siñirleri berkidür ve şeker nice ki eski olursa kuvveti arturur ve göksi yumşadur katısın giderür eger bādām yağıyla içerlerse ishāl eder ve kızıl şeker şusalık getürür köpüğün alıcak şuşatmaz ve aq şeker dükelisinden yegrekdür dükeli şayruluklara yarar şeker kâmiş ṭabî' atı yeñi şeker gibidir amma yel eyler." P.61

⁸⁰ şeker kâmiş boğaz iriligine nâfi' dūr. p.107

⁸¹ ḥabb-ı su'āl ki öksürüğe müfiddür otları buyān dibi ve ḥıyār toḥmı ve kabaḳ toḥmınınuñ içi üçer diremnişeste ve keşire ve şamg-ı 'arabî ve çekürdegi çıkmış kızıl üzüm ve aq ḥaşḥāş her birinden beşer direm bādām içi fıstıḳ içi kabları soyulmuş altışar direm nebāt sükkeri ayva çekürdegi lu'ābı içinde ezilmiş ola ṭatlu bādām yağı her birinden on iki direm bunları dögeler ve ısladalar yoğuralar birer direm ağırı yaşıca ḥablar edeler dil altında ezilince dutalar şuyun yudalar terkīb-i ḥabb-ı koḳıyā budur ayāric-i faykara on direm şahm-ı ḥanzāl ve şakmūniyā birer direm uşuḥudūs ve türbūd beşer direm bunları yumşak dögeler eleyeler ve bağanūs ya kerefes şuyıyla ḥabb edeler şerbeti iki diremdür ḥabb-ı ḡarīkūn on direm ḡarīkūn 'uşāre-i ḡafīş ve rāvend-i çinī ikişer direm on direm şeker-i ṭabrazad nite ki resimdür ḥabb edeler ve her ṭaṅla vereler ḥabb ki ishālī ḳabz eder. p.223

4.4 *Hazâinü's-Saâdât* –by Eşref Bin Muhammed

Hazâinü's-Saâdât was written by Eşref Bin Muhammed. It is currently unknown when exactly *Hazâinü's-Saâdât* was first written; however, it was once thought that it was written sometime in the late 14th century or the early 15th century. There are currently two copies of the work: one is kept in the Topkapı Palace Museum Library's Treasury, and the other is registered in the Konya Manuscripts Library under the number 8831. In the preface of the book, it is stated that the book intends to educate readers by employing simple and unadorned Turkish. Eşref Bin Muhammed, who is widely believed to be a physician, partitioned his book into three primary parts. He gave people advice on a wide variety of subjects, such as how to maintain a healthy lifestyle while traveling and how to properly care for children and pregnant women.

Hazâinü's-Saâdât provides an easy-to-understand description of the intricate relationship that exists between the natural world and the human body. The medicinal uses of sugar in the manuscript is quite limited. White sugar (*beyaz, ak şeker*), Rock candy (*nebat, nöbet şeker*) are the varieties whose names are mentioned specifically in the manuscript. After the work first begins with praise to God and the Prophet, in the first column, the author explains how the body will stay healthy in the context of the principles of medical science. Eşref Bin Muhammed gives general information about child health and diseases. He also talks about baby care and the duties of the caregiver and the periods of human life and how the person should be fed in each period.

Coughing was considered as a disease during the early modern period, although symptoms such as coughing signal also certain diseases in modern

medicine. In the medical text that has been examined, sugar is mentioned in the prescriptions that are given for the treatment of illnesses like cough and flu that are possibly associated with it. He describes a composition recommended by some doctors for coughing and flu:

According to this recipe, beating gum arabic, geven⁸² root gum, quince seeds, and licorice with white sugar, kneading it with mullein juice, and feeding it to the child the size of chickpeas. While feeding this, it is necessary to feed the child with the milk he drinks if he is sucking milk, and if he is not sucking milk, it should be wetted with fig water (Eşref bin Muhammed, 14a).⁸³

After then, Eşref bin Muhammed continues that; in case of difficulty breathing due to sputum coming into the respiratory tract, it is necessary to beat the flax seed and make the child lick the sugar (Eşref bin Muhammed, 14b).⁸⁴ The author divides the part he calls the first rule (*birinci kâide*) into eight sections. He talks about eight substances that will protect human health. The first part is about how the weather affects people and how one should be fed according to the seasons. In the second part, it gives information about how eating and drinking affects one's health. There is valuable information regarding wine consumption in this section. He recommends consuming wine with various sugars and pastes depending on the individual's nature. Honey with anise paste (*ballı anason macunu*), honey with clove paste (*ballı karanfil macunu*), *öd* and cinnamon paste (*tarçın macunu*), and rock candy (*nebat, nöbet şekeri*) are recommended for people with cold natures. If a person's nature is

⁸² Astragalus

⁸³ Bir nice hâkîmler eyitdi zâmğ-ı ‘arabî, kitre, ayva çekürdegi, buyan ak şekerle dögilmiş qarışmış şıgır dili şuyile yoğuralar. Her gün iki yâ üç nohud miqdârınca emzüren südiyle, eger emmezise incîri işlanmış şuyula ezeler, içüreler. Emzüren perhîz ide öksürüğe yaramaz gıdâdan p.153

⁸⁴ Nefesini katı almak ol dağı bir hastalıktır kim nefesi yolına balgam gelir nefesin ağduğ alır. “ ilâcı oldur kim kettân tohumun dögeler şekerle yaladalar ve dağı öksürük “ ilâcın ideler. p.153

balanced, sugarcane (*şeker kamışı*), honey with coriander (*kişniş*) paste, sweet aple (*tatlı elma*), and red grapes (*kızıl üzüm*) are beneficial (Eşref bin Muhammed, 35b).⁸⁵

In the second part, it gives information about how eating and drinking affects one's health. List which foods are beneficial for health. He asserts that:

People who know the good and bad of food have said: The healthiest foods are whole wheat bread, male mutton, one-year-old goat meat, fat calf, well-fed chicken, and partridge. Other healthy foods are small fish caught in fresh waters and kept in clean-ground rivers, unfiltered white honey; blanched almonds with red raisins, dried, fine figs, and walnuts; white, coarse-grained, juicy, sweet grapes cut after waiting for a while; well-grown figs; pomegranate, which is neither too sour nor too sweet, and which is called tart; a slightly sour, juicy apple; foods that taste like pears ... These are other beneficial and healthy foods (Eşref bin Muhammed, 1/30b).⁸⁶

The third part is the part where he explains the body movements he shows as one of the reasons for the body to stay healthy and how and under what conditions the sport will be done. The fourth part is about the movements of the soul. Eşref bin Muhammed is one of the reasons why the body stays healthy in this section is the calmness and mental health of the person. The fifth chapter is devoted to the benefits of sleep for body health. The sixth chapter is about the digestive system's importance and body stiffness. Eşref bin Muhammed has devoted the seventh part of the first

⁸⁵ şovuğ mizâclu kişilere cüvâriş-i anıson, cüvâriş-i kıranfûl, dârçîn-ı cüvâriş, ‘üd-ı cüvâriş, maştakî ,bal, nebât şekeri eyüdü. Mu‘ tedil mizâçlara kând, şeker, cüvâriş-i kişnic, tatlı elma, keşür, kızıl üzüm eyüdü. Aruğ kişilere simsim, şekerle ma‘ cün-ı cezer, cüvâriş-i müsemmin. Semüz kişilere ağardılmamış bādām içi, tuzlu leblebü, tuzlu bādām, zeytün. p.181

⁸⁶ Bil imdi ğidā her nesnedür kim ağızdan gire andan mi‘ deye varıcağ toklık tuta. A‘ zāya varıcağ kan ola kalan hılıtlarla andan et cān ola. Anı dağı bil kim ehl-i temyîz dimişlerdür: ğidāsı şıhhatin ri‘ âyet itmege kişinüñ arı buğday etmegi ola irkek şişek eti bir yaşımdan geçmiş inenmiş oğlağ eti, semüz buzağı eti, laţîf beslenmiş tavuğ eti, keklik, durrâc-ı çil, uşak balık kim taţlu suda avlayalar arı tobrağlu taşlu ırmağda tutalar. Ağ bal kim od görmemiş revâğ olmuş ola. kızıl kuru üzümle ağardılmış bādām, kuru eyü incirle koz içi yaş ğidāda eyü olmuş andan kesilmiş ağ iri dānelü sulu taţlu üzüm, eyü olmuş incir, laţîf enār kim mâyhoş dirler ne ğāyet ekşidür ne ğāyet taţlu, taţlu şulu elma kim arada yedide bir ekşisi ola. Laţîf şulu emrüd dāyim her birinüñ vaqtinde vaqti olmayan dükeli vaqtde ğidā idinicek eyü ğidā bunlardan olur. Bunlardan ele girecek zihî hoş ele girmeyicek kim nā-çar oluna. Ayruğından eyüsin bulduqça yiyeler. İllā kıymayalar şöyle eyü ni‘ mete kıyarlar. p.173

part to the benefits and harms of sexuality. The eighth section, which is the last part of this section, is reserved for bath etiquette.

In the section called second rule, the author gives information about the organs and general characteristics of the body. It starts with the head and brain, as in the ancients. This section is divided into 12 parts and another feature is that it also gives information about the relations of the organs with the stars and signs.

The last part, known as the third rule, explains the precautions that a traveler must take. This section is divided into three sections as well. Asraf bin Muhammed provides a list of precautions for travelers on hot and cold days. It concludes with a list of recommendations for sea travelers. In the book's final section, he discusses the precautions physicians recommend for lifelong health.

4.5 *Yâdigâr* by İbn-i- Sharif

There is a total of forty copies of İbn-i Şerif's *Yâdigâr* that have been discovered in various libraries. İbn-i Şerif was a well-known physician who practiced in the 15th century. During that time, he wrote the *Yâdigâr*, which became one of the most popular medical manuscripts in the Ottoman Empire. It is believed that *Yâdigâr* was written in 1425 (Tokaç, p.169). It was an essential part of the curriculum during that period. The piece that I will use in thesis is called as the Topkapı copy which was recopied in 1687. İbn-i Şerif's *Yâdigâr* consists of twelve parts. The first part is about health protection that needs to be taken, and the second is about diseases and their treatment. Both sugar and honey were typical raw materials for sherbet making. Sherbets were used in the treatment of many diseases. However, it had to be thickened with sugar or honey, depending on the nature of the disease and the patient. For example: "Sherbets that will cause constipation should be

cooked with honey, syrups for hot diseases (*ıssı marazlar*) should be cooked with sugar, and syrups for cold diseases (*soğuk marazlar*) should be cooked with honey” (İbn-i Şerif, 282a)⁸⁷.

İbn-i Şerif devoted the book's third part to malaria and its varieties, as well as smallpox and measles. In the fourth part of the book, he lists recommendations for the treatment of swellings, burns and wounds caused by various reasons. For example, In the recipe for *Ta'un* (plague) skewers, it is stated that İbn-i Şerif Armenian clay⁸⁸ and sugar can be used together:

It is very good to eat bole Armenian clay (*Ermeni kili*) before removing the *ta'un*. However, uninterrupted eating every day is essential. A person who drinks *hamr* (alcoholic drink, wine) should mix the wine and rose water thoroughly after eating the clay before taking it out and drinking it. If he is a person who does not drink wine, he should drink clay with rosewater (*gülâb*) every day. It is also suitable if the Armenian clay is beaten then mixed with sugar, and eaten, and rosewater is drunk on it. Alternatively, if the Armenian clay is chewed and eaten piece by piece and rosewater is drunk on it, it is still suitable (234a)⁸⁹.

In the fifth part of the manuscript, suggestions are presented about the fracture that may occur in the body. The sixth chapter is about skin care and aesthetic. He says that eating *kesira*, which is a kind of gum, with sugar will help the person gain weight (264b)⁹⁰. The seventh chapter of the book is about poisoning and insect sting medicines. The eighth chapter gives descriptions of experimental drugs against some diseases. In the ninth part, information about pulse and urinalysis is given. In the

⁸⁷ kabz idecek şerbetleri balla pişüreler ıssı marazlar şerbetin şekerle pişürmek gerek soğuk şerbetler şerbetin balla pişürmek gerek şerbetlere balı yâ şekerî şol kadar kıtmaq gerek p.649

⁸⁸ Büre-yi Ermeni, a type of borax, also called Armenian clay.

⁸⁹ Kil-i Ermeni yemek çıkarmazdan önden gâyet eyüdürlakin her gün muttasıl yemek gerek şart oldur tabibler katında şüreb-i hamr iden kişi olursa her gün çıkarmazdan önden Kil-i Ermeni yiye ve şarâbla gül suyun memzûc idüb içe ve eger şarâb içmez kişi olursa Kil-i Ermeni gülâbla her gün içe ve eger Kil-i Ermeni döğüb şekerle karışdırub yese üzerine gülâb içse revâdur ve eger Kil-i Ermeni pâre pâre çiyneyüb yese üzerine gülâb içse câyızdır p.609

⁹⁰ gâh gâh kesîrâyı döğüb şekerle karışdırub yiyeler p.637

tenth chapter, recommendations are given about being a physician, and in this part, and drug-making are discussed. In the eleventh chapter, the names and diagnoses of the diseases that can occur in humans are given. İbni-i Şerif says that the cause of hiccups (*fuak*) is eating, vomiting or water, and states that the treatment is to drink mint paste, almond oil, and sugar (Ishak bin Murad,287b).⁹¹ In the twelfth chapter, brief information about ointments is given. An example of the differentiation of usage areas of honey and sugar is in the section of ointments. In *Yâdigâr*, sugar is not found in the recipes in the production of ointments, on the contrary, honey is used in many recipes to thicken.

One of the most interesting recipes found in the *Yâdigâr* relates to making sherbet from the anchusa plant. In this description, İbni-i Şerif seems to be talking about the classiness of these two raw materials rather than the benefits of sugar and honey:

Anchusa Borage Syrup (*Şarâb-ı lisânü's-sevr*) it is very good for people with love temperament, love diseases, heart compression (*hafakân*). It is very useful for cough and shortness of breath, and in a word, for breath. It is calming, relieves distress and anxiety in the heart. It is especially cooked with melissa (*badrençbuya*) water or it is drunk by removing the juice of the two like a rosebush and adding sugar. If sugar is not found or the patient is very poor, it is cooked with Basra honey or a little other honey. If he does not have the opportunity to drink this borage sherbet for a long time, or if he is a poor person, that is, if he is a student and cannot afford to cook sherbet, boil the borage leaf with water and add a little honey to it, otherwise just continue to drink borage water every day without being disgusted⁹²(İbn-i şerif, p.126).

⁹¹ fûâk ya'ni inçkırık demekdir sebebi aç olmağdan yâhûd çok ta'âm yimekten ve istifrâğdan yâhûd şudan olur 'ilâcî na'na ma'cûnun yimek gerek ve bâdem yağıyla şeker içürmek gerek. p.658

⁹² Sevdâvî mizâclı kişilere, sevdâvî illetlere, yürek oynamasına (hafakân) gâyet iyidir. Öksürüğe ve nefes darlığına ve bi'l-cümle nefese çok yararlıdır. Sâkinleştiricidir, gönüldeki sıkıntı ve endişeleri giderir. Özellikle bādrençbūya şuyuyla pişirilir veya ikisiniñ gülâb gibi şuyunu çıkarıp şeker kıtarak içirilir. Eger şeker bulunmazsa veya hasta çok fakîr ise Başra balı ile veya biraz başka bir balla pişirilir. Bu lisânü's-sevr şarâbına devâm uzun süre içmek için imkânı olmasa veya fakîr bir kimse olsa, yani talebe olup şarâp pişirmeye imkânı olmazsa lisânü's-sevr yaprağını şu ile kaynatıp içine biraz bal kıtarak, o da olmazsa sâdece lisânü's-sevr şuyuna, igrenmeden her gün devâm ederse, inşâallâhu te'âlâ rub' şıtmasından kurtulur. p.126

The various forms of sugar that can be identified within the contents of this manuscript are white sugar (*ak şeker*), fanidh sugar (*stick, pennet or cheese*), pure sugar (*sade şeker*), rock candy (*nebat,nöbet şeker*i). Some recipes specifically mention certain types of sugar. For example, İbni-i Şerif states that repeated (*mükerrer*) white sugar is needed to make lemon sherbet (*şarab-ı limon*)⁹³ (76b). He also mentions sherbet's making techniques in his manuscript. He also gives details about how to make *cüllab* and what types of sugar can be used in it. This recipe provides insight into the lexicon employed about confectionery during a specific historical period. Calling *cüllâb* to sugar purified with egg white is the confectioner's term. Physicians call the sherbet cooked with rose water (*gülâb*) and sugar "*cüllab*" that three hundred dirhams of *gülâb* and one hundred dirhams of good sugar are added to make it thick. Other sherbets; When cooked like violet , rose, sandalwood, lemon, citrus, and hummaz, sugar is boiled with egg white or milk and *purified*, as we have mentioned. Then it is cooked. If it gets into the hand, it is cooked with repeated sugar, white pure ayluc(?) sugar, or rock candy (*nebat,nöbet şeker*i)(84a/84b).⁹⁴

*Fanidh sugar (stick, cheese, pennet)*⁹⁵ is more common in *Yâdigâr* than other types of candy. İbni-i Şerif explains the *Fanidh* sugar with the marginal note “*şeker-i*

⁹³ şarâb-ı lîmûn için eyü aķ mükerrer şeker gerek veya eyü aķ mevc şâfî şeker gerek kim eyü pâk ideler yumurta ağıyla tâ kim şarâb-ı lîmûn aķ ve şâfî ola. p.471

⁹⁴ şeker cüllâb demek şeker-rîzler ‘ibâreti ve ıstılâhıdır hekimler katında cüllâb gülâbla ve şekerile pişen şerbetdür kim üç yüz dirhem gülâbla yüz direm eyü şeker katup kıvâma getüreler ve geru kalan şerbetler benefşe gibi ve gül gibi ve sandal ve lîmûn ve nârenc ve hummâz gibi pişirmelü olicaķ şeker i bu zıkr etdigimiz gibi yumurta ağıyla veya süd ile kaynadup şâf ideler andan pişüreler ele girerse mükerrer şekerle pişüreler veya aķ şâf ayluc şekerden pişüreler veya nebât şeker iyle pişüreler ve ba’ zılar nîlûûferi istiķtâr idüb gülâb gibi şuyun çıkaralar nebâtla ve eyü şâfî mükerrer pişüreler. p.478

⁹⁵Fanidh sugar was also known as pennet in Europe and is thought to derive from the Arabic name al-fanid. In the Medieval era it was also recorded in Latin as penidium. It was a simple soft-drawn white stick, which was sometimes formed into a twisted. It was thought to be good for colds, chest pain and nerves (Mason, p.46 ; Richardson, p.62).

fānīd” means sugar cheese; it is both white and soft like cheese”⁹⁶ Clear information about the conditions for which *fanidh* sugar is used needs to be known.

Nevertheless, it is encountered in numerous paste recipes. In some dictionaries, however, *fanidh* sugar is also referred to as white sugar or raw or unprocessed sugar.

In a paste called *ma'cūnū'l-lebūb*, it is seen that sugar is used to knead the paste. This use of sugar also points to its practical and helpful place in drug making:

Ma'cūnū'l-lebūb: It increases the semen. *Bādām-i mukaşşer* and hazelnut and Indian ingredients must be new and white. In addition, the inner bark and outer bark must be peeled off. Inside of pistachio and inside of fir, and inside of *habbū'z-zalem* and violet berry. It is taken in equal amounts from each and beaten and kneaded with *fanidh* sugar. An egg is eaten every day, one morning and one evening. It will be helpful (113a).⁹⁷

4.6 Conclusion

All things considered, to fully comprehend the advantages of sugar, it is imperative to adopt a comprehensive perspective on the perception of the world and the human body during the pre- and early modern eras. This phenomenon can be attributed to the fluid boundaries between food and medicine, as determined by humoral theory. This chapter center on the medicinal aspects of sugar to uncover and examine its significance within the pre- and early Ottoman Empire. The primary focus of this chapter pertains to the interpretation of sugar within the context of traditional Ottoman medical literature, as well as its various practices in relation to

⁹⁶ şeker-i fānīd şekerpeynir ma' nâsınadır hem beyāz ve hem peynir gibi yumuşaktır. p.166

⁹⁷ ma' cūndan ve şerbetden cimā' için yardım isteyen kimesneniñ karnı ne kâtı aç ve ne kâtı tok gerekdür ki iftār olunan nesneniñ eseri zāhir ola şıfat-ı ma' cūnū' llebūb menī'i ziyāde ide bādām-ı mukaşşer ve fınduk içi ve Hindustān kızı içi ki yeñi ola ve aq ola ve iç kabı ve dış kabı şoyulmuş ola ve Şam fıstığı içi ve köknār içi ve habbū'z-zalem ve meneküş yemişi içi her birinden berāber yumuşak alup dögeler ve fānīd şekeriyle yoğurular her gün bir şabāh ve bir aḡşam yumurta kadanı yiyeler müfid ola. p. 503

human health. Medical sources are especially important for the pre and early modern periods' food culture, the logic of the recipes and the perception of taste.

The manuscripts written or copied in medicine in pre- and early modern Anatolia show us that sugar was known by the famous physicians of the period in Ottoman literature of medicine since the early times. It needs to have precise data to understand the use of sugar in folk medicine or traditional medicine. However, since sugar is a hard-to-find and expensive commodity, it can be concluded that sugar was a luxury product to have access to for ordinary people. As İbni-i Şerif says in one of his recipes, which I have mentioned here, the expression "use sugar if you are rich and use honey if you are poor" summarizes the state of sugar in the public eye. In addition, as I mentioned above, sugar was used in the production of medicines in the hospitals of the period, as Ömer Lütfi Barkan shows in the expense lists of Fatih Mosque and Sultan Bayezid II Complex. I can assume that ordinary people, at least those who can visit hospitals, use sugar here.

The medicinal manuscripts provide us valuable information about the types of sugar used in medicine in the 14th and 15th centuries in Ottoman Empire. Although almost all sugars mentioned in the texts are white sugar, the specification of their type in some recipes is important. The minor differences between these sugars are caused of their production process. Most probably these differences are essential for physicians. There is a difference between medical texts and the expenditure lists of the *Dariüşşifa*: the sugar called European (*sükker-i efrenci*) sugar, - which has such a name because it was imported from that region- is not found in these medicinal texts.

CHAPTER 5

SUGAR IN THE OTTOMAN MEDICINE DURING THE 14th AND 15th CENTURIES

5.1 Which Sugar?

The medical manuscripts of the 14th and 15th centuries that constitute the primary sources in thesis include detailed information about the therapeutic use of sugar in the Ottoman medicine as it was presented previously in this chapter. It can be concluded that there was a clear coherence between the perspectives attributed to the nature and to the practical use of sugar in the treatment of diseases in each manuscript. In addition, to the various uses of sugar in medicine which were mentioned in previous chapters, these manuscripts directly reflect a parallelism to the applications of sugar in the medieval Islamic world and in Europe during the same time period. The types of sugar that can be seen in the table below are the ones that were most frequently mentioned in the four different manuscripts of the study. It can be argued that the use of different types of sugar in the manuscripts may imply that each type of sugar was suitable for the treatment of different diseases.

The table given below list the types of sugar mentioned in the four medical manuscripts that I examined in my thesis. Red sugar and solid white sugar (*Tabar zad*) are generally the least used type of sugar. In the second chapter I explained these different types of sugar, how they were produced, and the nuances between them. All these sugar types -except red sugar- are refined white sugar. As the name suggests, red sugar is of lower quality and not fully refined. The benefits of these sugar types I have mentioned for the human body are listed in the aforementioned manuscripts. For example, red sugar is only found in *Müntahab-ı Şifâ* and

Edviye-i Müfrede. In these two writings, the benefit of red sugar is given as follows: “It helps to prevent gas formation and phlegm in the body, and It can cause thirst in the body.” It is also stated in the *Edviye-i Müfrede* that solid white sugar (*tabar zad*) relieves the heat in the body medically. *Müntahab-ı Şifâ*, includes a recipe used for diarrhea and no benefit is stated in other manuscripts. Most information about fanidh sugar, also called pennet sugar or cheese sugar, can be found in *Yâdigâr*. İbni-i Şerif also explains what fanidh sugar is in a marginal note (*derkenar*) in his manuscript.

In *Yâdigâr*, I usually see fanidh sugar in making paste. While I usually see fanidh sugar in making paste in *Yâdigâr*, I come across fanidh sugar in making pills in a recipe mentioned in *Müntehab- Şifâ*. Rock candy is frequently mentioned in the other three medical manuscripts, except for *Edviye-i Müfrede*. Rock candy (nebat,nöbet şekeri), for example, in *Hazâinü's-Saâdât*, Eşref Bin Muhammed mentions that Rock candy (nebat,nöbet şekeri) will benefit people with a cold temperament next to wine.

Table 3:
Types of different sugar in four manuscripts⁹⁸

Manuscripts	White Sugar (Beyaz,ak,şeker)	Red Sugar (Kırmızışeker)	Rock candy (Nebat,nöbetşekeri)	Solid white sugar (Tabar zadşekeri)	Fanidh Sugar (Peynirşekeri)
Edviye-i Müfrede	5	-	-	3	-
Müntehab- 1 Şifâ	4	1	9	4	3
Hazâinü's-Saâdât	1	-	5	-	-
Yâdigâr	8	1	5	-	20

⁹⁸ Apart from the sugar types listed above, the only type of sugar that I did not add to the table is suleymani sugar. Among the mentioned manuscripts, it is found only in *Müntahab-ı Şifâ*.

5.2 The use of Sugar in Ottoman and European Medicines in a Comparative Perspective

The most common expression used for sugar in 14th and 15th centuries Ottoman manuscripts is “white sugar” which is the granulated sugar that has been refined at least two or three times. It was thought that the more refined and bleached, the greater its utility and, naturally, its value. Physicians of the period in Europe also often recommend white sugar to their patients. According to, many Medieval and Renaissance studies in history of medicine in Europe, I come across the use of white sugar in patients' fasting meals or in the pharmacists' lists. I should mention that the unique position of sugar as a medicine originated from the transmission of sugar-related medical knowledge from classical Islamic texts to the medieval Europe. Muslim, Jewish, and Christian physicians, who translated the sources of humoral medicine and knew about the properties of sucrose transmitted the knowledge of sucrose into the European medical system during the Middle Ages (Mintz, 1980, p.96). Beginning with the Crusades, the medicinal use of sugar was increased and almost every drug started to contain sugar in medieval European medicine. It was believed that sugar was beneficial for chapped lips, stomach ailments (without bile production), dry cough, and chest pains. There are many references about the use of sugar in pharmacology in several sources written during the late medieval and Renaissance eras in Europe. For example, Katherine Neville, Duchess of Norfolk (C. E. 1397- C. E.1483) had many medicinal preparations like pills, powders, confections, antidotes and theriac supplied by John Clerk, who was also the apothecaries of King Edward IV of England (C.E 1442 – C.E.1483). Sugar is a significant component among the Duchess's medicinal and confectionary ingredients.

Although the reason is not specifically stated in the bills of the Duchess, it seems that the sugar she ordered high quality third cut sugar cane. Additionally, she desires rock candy (*nebat,nöbet şekeri*) for the chest (Hannes Kleineke, 2015, p.512- 521). Chest pain and cough are two of the illnesses for which sugar is extensively used in medical treatment both in European and Ottoman medicine It is understood that the use of sugar in the treatment of sore throat is one of the treatment methods of the period. For example, Hacı Pasha mentions that sugar softens the chest and removes the hardness and bulk in it. In his book, he advice to boil dried figs, grapes, maidenhair, public grass, iris, violet, licorice and fennel, filter sugar or honey and to drink it if the cough is due to a cold. This beverage as a kind of laxative will remove the phlegm (Hacı Paşa, p.109).

In Renaissance Portugal, sugar, like many spices, was a luxury food that benefited from its medicinal properties. The overseas expansion and colonization strategies of Portugal, including primarily sugar plantations in Madeira, facilitated the accessibility of sugar and other spices. It also symbolized the generosity of the royal family and the high classes towards the poorest members of society. The royal family and nobles of the time donated sugar to hospitals, monasteries, and charities so that even the lowest segments of society could consume sugar in times of illness. According to Rodrigues and Sá, these institutions also generated revenue through the distribution of sugar to other regions. In addition to serving as a sweetener, sugar was used extensively in the confectioneries given to the patients. Furthermore, the nuns utilized sugar in the production of products such as marmalade, generating additional income (L.O. Rodrigues and I.G. Isabel dos Guimarães Sá,2015, p.190-193).

According to hospital records, sugar and sweets were the most consumed types of products:

It was also used to cook broth, poached eggs, and the milk-boiled rice that was given to the sick after bathing. On fasting days – Fridays, Saturdays, and Sundays – the sick ate broth, which included sugar, poached eggs, and sweet rice, probably to compensate for the lack of meat (L.O. Rodrigues and I.G. Sá, 2015, p.186).

Additionally, numerous types of sugar appear in hospital records. The most consumed type was white sugar, which, as previously stated, was believed to have numerous health benefits. In addition, the authors who examined the records of *Nossa Senhora do Pópulo* discovered entries on this list with the names black sugar, rose sugar, white sugar, and candil (?) sugar.⁹⁹ Rodrigues and Sá point out that the roles of each sugar varied. Take an example, rose sugar was favored for febrile patients and intestinal purification. Additionally, black sugar was combined with honey and eggs to make tisanes and enemas (L.O. Rodrigues and I.G. Sá, 2015, p.186-187). Sugar produced by Portugal in the Atlantic was bought also by Florentine merchants (James Shaw and Evelyn Welch, 2011, p.191-193). Shaw and Welch investigate the medical use of sugar and sweets in Renaissance Florence. According to them, as the Florentine apothecary Giglio records show, sugar was found in many drug compounds like syrups, purges, clysters, electuaries, and pills and confectionaries. It was one of the most important goods that Giglio distributed in his business. Additionally, it is clearly seen that pharmacist's records demonstrate, one of the most valuable sugar-based products was rock candy (*nebat, nöbet şekeri*), which was thought to be good for sore throats. Physicians recommended refined

⁹⁹ Candil Sugar may have been used here for Sugar candy/Rock candy (*Nebat* or *Nöbet şekeri*), which is a crystallized hard candy. Merriam-Webster. (n.d.). Candy. In Merriam-Webster.com dictionary. Retrieved September 03, 2023, from <https://www.merriam-webster.com/dictionary/candy>

white sugar. Red sugar was used for clyster (James Shaw and Evelyn Welch, p.191-193). Theresa Vaughan says that “sugar was both a medicine and an ingredient in medicines, and that it makes the mixture more edible” (Vaughan, 2020, p.146). This is what she has to say about the role that sugar played in the medical practices of early modern Europe. She adds that sugar was also used as an ingredient in meals designed to be gentle on the stomachs of the patients (Vaughan, 2020).

Sugar and honey were frequently used to produce medicine, food, and beverages such as sweets and sherbet both in Ottoman and European worlds. The use of sugar and honey in food and drink combinations also served some practical purposes, like how sugar reduces thirst relative to honey. Similar phrases are employed in *Ibn-i Nafis*. He compares sugar and honey, asserts that a person will experience less thirst when consuming sugar as opposed to honey because sugar reduces phlegm-induced thirst. However, he points out that old sugar can also cause intense thirst and an increase in impure blood (Tsugitaka, 2015, p.102).

5.3 Sweet Dishes Such as Halva

Sugar is not only used in the beverages prepared to cure diseases. It is used also in the preparation of desserts and sweet dishes such as halva. These desserts were consumed also as medicaments. For example, Şirvani’s cooking manuscript include recipe of desserts with medicinal advice. In the tenth chapter of the book, he explains various type of halva recipes and their benefits. While Şirvani states that the nature of all halva is hot and dry, he draws attention to the difference between their temperature and dryness. According to him, the temperature and dryness of the halva will change depending on whether sugar, honey, or both are used to make it. This alteration determines which types of people with certain temperaments will benefit

from halva. He states that when halva is made from pure honey, its dryness and hotness will be higher than other halvass, and that this will be effectual for the elderly, cold-tempered, and phlegmatic persons. He states that:

When halva is made from honey and sugar, its temperature and dryness are less than that of honey halva and it is more pleasant to eat; It is more suitable for those with moist nature, children and people with a lot of blood due to phlegm, it gives strength to the kidney and stomach. When halva is made from pure sugar, it is less hot and dry than honey halva, and is suitable for all temperaments (Şirvani, 2005, p.214).¹⁰⁰

It was a common practice to use sweets such as confection, halva, sherbet, rose petals jam (*gölbeşeker*), *perverde*¹⁰¹, *pelte*¹⁰² and rice pudding as a form of medicine for the treatment of a variety of conditions in medicine as witnessed by Ottoman medical manuscripts. For example, Ashraf bin Muhammad in *Hazâinü's-Saâdât* who defines the middle age of man as "the period in which the sun of man's life tends to set," states that in this period, man's nature tends to increase black bile.¹⁰³ He advises sweet halva for people who are in the middle of their life to give strength to their stomachs.¹⁰⁴ However, according to him, there are certain rules that should be followed when consuming sweet foods. He states that cold water should not be drunk after dessert.¹⁰⁵ Şirvani gives a total of sixteenth different recipes of halva, and he also discusses the beneficial effects of using certain recipes. Upon closer examination of the advantages provided by different types of halva, it becomes

¹⁰⁰ Ve kaçan kim helvâ balıla şekerden düzülmüş ola anuñ harâret ve yübüseti bal helvâsınıñ harâretinden ve yübüsetinden azdur ve hem hoş-ğor-rağdur, mertüb mizâclulara ve oğlancuğlara ve balğamdan olan demevî mizâclulara muvâfıkdur ve bögrege ve ma' deye kuvvet verür ve kaçan kim helvâ mücerred şekerden düzülmüş ola, ol harâretde ve yübüsetde bal helvâsından ve balıla şeker helvâsından azdur, cemî' mizâca muvâfıkdur. p.214

¹⁰¹ A dish obtained from the essence of various fruits and vegetables.

¹⁰² Pudding made with starch, sugar, water, or fruit juice

¹⁰³ Çünkü yigitlik çağı geçe 'ömrüñ güneşi öylesinden zevâle dönmüş ola tabî' at sevdâ artturmağa meyl itdüğü vaqtdür. p.159

¹⁰⁴ latîf helvâlar p.159

¹⁰⁵ tatlı sonına, issi aş sonına şovuk şu içmeyeler ki yaramazdur. p.177

evident that a significant portion of these benefits can be classified into fundamental categories.

These include the promotion of brain health, an increase in the number of sperm and sexual performance, and a healthier state of kidney function. For instance, according to Şirvani, the recipe for *helva-yı yabise-i şekerîyye* (sweet dried halva) (*şekerli kuru helva*), gives the brain strength and aids in weight gain. Also, it is stated that the recipe is suitable for thin people.¹⁰⁶ Şirvani mentions that honey halva (*bal helvası*) is beneficial for kidney health and strengthens sexual power by increasing semen. According to him, the sweet dish known as *helva-yı sabuniyye* (halva)¹⁰⁷ is beneficial not only for people with a warm temperament but also for children and people who suffer from paralysis. Şirvani believes that this recipe not only helps to gain weight but also beautifies the skin, strengthens the brain, and removes phlegm from both the stomach and the brain (Şirvani, 2015, p.216).

In addition, Şirvani clarifies the temperaments best suited for the consumption of these special types of halva. Even though he does not explicitly state this in every recipe in the book, this is one of the strongest examples demonstrating the impact that humoral theory has had on culinary culture and medical practices. In the section

¹⁰⁶ Dimāğa kuvvet verür, beden semridür, inezelere be-ğāyet muvāfıkdur.” “şan‘atı oldur kim, yüz elli dirhem şekerî otuz sekiz dirhem şuyıla qalaylanmış tancarada yumşak od üstinde ezeler, köpügi alınduğdan soñra ol kadar kaynadalar kim bağlana ve anuñ ‘alāmeti oldur kim, birez şuya veya ağzına koyınca saķıza döne, pes mermer üstine dökeler ve ana yigirmi beş dirhem kadarı qabı çıkmış ve döğülmüş bşdem katalar, yoğuralar, yayalar, ol kadar qatlanalar kim şovuya ve tamām bağlana, pes gereğince keseler, getüreler, yeyeler. p.163

¹⁰⁷ A kind of halva made with starch. <http://www.lugatim.com/s/Sabuni> accessed date 23.05.2023,” “şan‘atı oldur kim, alalar diledüklerince aķ şekerî, az şuyıla qalaylanmış tancarada yumşak od üstinde ezeler, köpügin alalar, cüllāb kıvamına erişdüreler, koyalar, dura ve andan soñra diledüklerince şirlugandan alalar, qalaylanmış tancarada birez kaynadalar ve üzerine ol düzülen cüllābdan birez koyalar, şöyle kim her yüz elli dirhem şekerile yigirmi dirhem revaķ bal bile koyalar, ol kadar qarışduralar kim bağlanmağa başlaya, pes alalar gereğince nişastayı, şuyıla ezeler, havāyic üzerine tancaraya koyalar, qarışduralar ve qalan cüllābı dañı havāyice az az içüreler ve çün-kim qalan cüllāb dañı tamām oldı ve qarışduralar kim tamām erişe, pes saħanlar qotaralar ve altına üstine eyü qoķulu otlarla beslenmiş şeker unın ekeler, yeyeler.

on halva, where he discussed the benefits of starch pudding called *faluzec ya 'ni kim palude (paluze)*¹⁰⁸, he mentions that this dessert helps to gain weight, soothes the breast, and strengthens the brain. Also, he states that it is appropriate for bodies in good health (*sahih mizaçlı*)¹⁰⁹. Hacı Paşa also recommends the *palude* dessert to soften the breast. However, there are also instances where sweets are not recommended in all cases interestingly, Hacı Paşa makes some suggestions to people who have recovered from the disease but have not yet overcome their weakness and weakness. Interestingly, he states that among these recommendations, starchy halva and pudding should be avoided (Hacı Paşa, 2019, p.65 M8a). During this period, Hacı Paşa advised to stay away from foods that increase body temperature excessively. The reason for this may be that starch is difficult to digest in the body and causes occlusion (*südde*).

Şirvani suggests another recipe for halva called flourless halva *la-dakik leha* for those who have in cold temperatures. It is a common knowledge that physicians recommend different kinds of halva to their patients for the treatment of a wide range of illnesses. For instance: in a recipe recommended for insomnia described by İbni-i Şerif's *Yâdigâr*, sugar and halva are recommended for the patients, it is not specified the types of halva¹¹⁰ (İbn-i Şerif, 2007, p.181). Another example is found in

¹⁰⁸ A kind of loose-consistent dessert that is eaten cold. <http://lugatim.com/s/Paluze> accessed date 24.05.2023. gögsi yumşadur ve huşuneti giderür ve bedeni semridür ve dimāğa kuvvet verür ve süddeyi açar, şahîh mizâclulara muvâfıkdur. Ve bunuñ şan' atı oldur kim, alalar yüz elli dirhem şeker unını ve elli dirhem kabı çıkmış ve dögülmüş tatlı bādem, birez kafurıla biribirine çarışduralar ve hem alalar elli dirhem ak şeker, on iki dirhem gül şuyıyla kalaylı kabda yumşak od üstinde ezeler, köpüğün aldukdan sonra ocağdan endüreler ve çün-kim şovumağa başlaya, üzerine ol kadar şekerile bādām bırakalar, yoğuralar ve eger sulurak düşerse üzerine ol kadar şekerile bādām koyalar, kıvama gele, pes kaskatı yoğuralar ve andan kamçılar ve kavunlar ve hıyarlar ve almalar dökeler, düzeler ve ma' cün gibi keseler ve dağı bulara beñzer ne dürlü kim hatırları isterse keseler, şahan içine veya tabak içine düzeler, yeyeler.

¹⁰⁹ People with a perfect, healthy temperament.

¹¹⁰ ammā dīvāneler 'ilācın māü'l-cübñ ya' ni peynir şuyu ile ideler ve uyhusuzluğa kabağ çekirdegi yağın ve benefşe yağın ve nılüfer yağın kız oğlan südüyle başa dürteler ve benefşeyi ve nılüferi ve it

Müntahab-ı Şifâ' of *Celâlüddin Hızır*, also known as *Hacı Paşa*. In his work, Hacı Paşa says that all honey halva increases blood, semen, and bile in the body and helps weight gain. It has also benefits for the throat and lungs, but Hacı Paşa adds that it can also harm the spleen. Like Şirvani, Hacı Paşa also draws attention to the differences in halva made from honey and sugar in his work. According to him, people feel less warmth if halva is made from sugar. Hacı Paşa, who gives an example of a type of string halva called (*peşmine, pişmaniye*)¹¹¹, states that it is difficult to digest this halva because it overheats the body, and causes occlusion (*südde*)¹¹² in various organs¹¹³ (Hacı Paşa, 2019, p.65p28b).

Ottoman historian of medicine, Nuran Yıldırım also supports the use and the importance of sweets dishes in Ottoman medicine. While explaining the diseases that certain types of sweets were used to treat in Ottoman medicine, she states that the main function of sweets was to gain weight and strengthen the body. For instance, for those who have nightmares, *pelte* was among the desserts recommended. Halva made with honey (*bal helvası*)¹¹⁴ was used in the treatment of lung diseases and rose petals jam (*gölbeşeker*)¹¹⁵ was recommended for the treatment of stomach and liver diseases. In addition to this, she claims that vermicelli kind of *kadayıf* was recommended for the treatment of pneumonia. Yıldırım says that garlic

üzümü yaprağı ve söğüt ağacı yaprağı ve mārūl ve haşhāş bunları kaynadalar başa uralar ve şekerle helvā vireler ve bādem yağın ılıcağ idüb başa süreler fāide ide gıdā tauḡ şorbası mārūl yaprağıyla ve azcık kişnīc ile nāfi' ola.

¹¹¹ A type of halva separated by vermicelli.

<http://lugatim.com/s/P%C4%B0%C5%9EM%C3%82N%C4%B0YE> accessed date 07.06.2023

¹¹² In Arabic, it is called peklik (occlusion). Stomach fullness or congestion in various organs.

¹¹³ dükeli bal helvāları kanı ve menīyi ve safrāyı arturur gevdeyi semirdür kızdurur boğaza ve öykene eyüdü am mā ḡalaḡa ziyān eder kanı göyündürür ' ıtlāk eder şekker ile olan helvānuñ balıla olandan ḡarāreti eksükdür peşmine helvā gevdeyi kızdurur gec siner ve südde eyler.

¹¹⁴ A kind of halva made with honey

¹¹⁵ A kind of paste made of rose petals

perverde was recommended for darkening, dizziness, and coughing, and she mentions that eating rice pudding (*sütlaç*) could boost sexual power (Yıldırım, 2008, p.163).

5.4 Sherbets

Sherbets, sweet drinks that can be sweetened with water, fruit extract, sugar, or honey, were among the medicines that physicians frequently used due to their medicinal properties. In the various medical texts that it is examined, there are many recipes for sherbet. Sugar also has an important place in making sherbet because it is much easier to use compared to honey. However, the temperament of the sick person also determines what material the sherbet will be made with.

Sherbet-making techniques are discussed by *Hacı Paşa* in the sixty-second section of the third main part book in which he provides background information on sherbets. He mentions that the nature of every plant must have the nature of the syrup itself. It also depends on the type of illness being treated as to whether honey or sugar can be used to make sherbet. In addition to classifying things according to whether they are hot or cold, diseases were also classified in this manner, and various drug preparations were made in accordance with these classifications. If the illness is of a hot nature, the sherbet should be prepared by cooking it with sugar; if the illness is of a cold nature, the sherbet should be prepared by cooking it with honey (P177b)¹¹⁶.

Another example of the fever issue is available in *Yâdigâr*. In the section of sherbets, İbni-i Şerif gives a recipe for fig sherbet. He says that this recipe is beneficial for cough and lung, and good for back pain. He says that it will also be

¹¹⁶ Issı maraızlar şerbetin şekerile bişürüler şuvuq maraızlar şerbetin balıla bişüreler. p.234

useful for diarrhea. There is actually honey instead of sugar in the preparation of the recipe, but İbni-i Şerif recommends adding sugar instead of honey if the person has a fever¹¹⁷ (İbn-i Şerif, 69b). In a sherbet recipe named "*Şarâb-ı ustuhûdûs*," which is given for the problems caused by bile and phlegm, it is stated that this sherbet should be cooked according to the temperament of the person.¹¹⁸

5.5 Rose Jam: *Gülbeşeker*

Gülbeşeker refers to a kind of medicinal paste made with rose and various medicines. It appears both as a medicine and as a dessert in Ottoman medicine and cooking manuscripts. It can be said that this paste's medicinal use lasted until the Ottoman Empire's last years. Musahipzade Celal shares a small anecdote about *Gülbeşeker* in his work *Eski İstanbul Yaşayışı*. "*Gülbeşeker* facilitates digestion and gives softness. One spoon is taken at bedtime at night" (Celal, 1946, p.115). The medicinal benefits of *Gülbeşeker* were mentioned in all the medical manuscripts it is examined. In medical manuscripts, *Gülbeşeker* is recommended for different diseases and is generally included in drug mixtures for example, Hacı Paşa asserts that *gülbeşeker* cuts phlegm, is good for the stomach¹¹⁹ (Hacı Paşa, p75a). It and gives strength to the liver. It helps the food to be digested. It is also recommended for

¹¹⁷ şıfat-ı şarâb-ı incîr bu bir şarâbdır kim âsânlık ile ishâl ide sine ve öykene ve öksürüğe fâide ide ve bil ağrısın giderir şan' atı budur alalar eyü incîri ne kadar ki dilerlerse ve on kendü berâberince şu ile kaynadalar müherrâ pişince pişdikden soñra bir gice koyalar tura irtesi gün bir bezden sıkıp süzeler ol kalan şunun yarısı kadar bal katalar kaynadalar cüllâb kıvâmına gelince andan bir zarfa koyup şaklayalar hâcet vaktinde şarâb idüb içeler nşfi' ola ve harâreti olan kişi için bal yerine şeker koyalar ol vakit harâret az olup ve ishâl eyleye .p465

¹¹⁸ üç yüz doksan dirhem şeker ya bal ile kıvâma getüreler hâline göre ve vaktine göre ideler ba' zı mizâca şekerle ve ba' zılara balla bişüreler şerbeti on dirhem ya on beş dirhem ıscak şu ile içeler nâfi' ola. p.482

¹¹⁹ Eger ma' de ağnsı ta' am fâsid olmağdan olursa ıssı suyuyla tezcek kuşalar iştahâ za' if olmak iştaha getürür nesneler şarâb-ı limün ve şarâb-ı sikencübün ve şarâb-ı sefercel ve kebere turşısı ve kuru üzüm ve şoğan ve şarımşak ve alma ve armut ve ayva ve sumak ve dükeli turşılar ve ekşi ve tuzlu nesneler ve tuzlu balık ve tuzlu zeytündür hazın za' if olmak eger burüdetden ve ruṭbetden olursa haẓmı avı eden nesneler gülbeşeker ve gülengübün sakızıla ve çaranfûl ve sünbülile yeyeler ve gec haẓm olur nesneler yemeyüp laṭif nesneler yeyeler. p.115

abdominal pain caused by wind in the stomach and intestine.¹²⁰ Furthermore, İbn-i Şerif recommends *Gülbeşeker* made with sugar to exhausted women after giving birth. This recommendation is also compatible with the recommendation of sugar and sweet foods to patients in the healing process: “If there is a great weakness during or after giving birth, *Gülbeşeker* made with sugar or *Gülengübîn*¹²¹ is crushed with *Gülâb*¹²² and filtered and drunk. A person immediately finds strength. Even if her consciousness and mind are gone, a person will come back¹²³ (İbn-i Şerif, 213b).

One of the issues that the humoral theory gives importance to in finding the balance of the body is the purification of the body from harmful substances and excesses. If such harmful substances accumulate in the body, can cause blockages and diseases. One of the basic principles of the theory is the digestion of food, and the other is the removal of harmful residues from the body by various means. Vomiting is one of these ways. There are recipes on how to induce vomiting. *Gülbeşeker* also finds its place in these recipes. If the person who vomits is cold-tempered, he should drink apple and *mastaki*¹²⁴ juice, after beating an equivalent of *ud-ı hindi* (*öd ağacı*)¹²⁵. Also, in this regard, *Gülbeşeker* is very useful with

¹²⁰ ya‘ni göbek burma sebebi bağarsuqlarda yel eglenmekdür ‘alâmeti kûr kûr ötmek ve ağrı gezmek ve yel çıktuğınca ağrı yeynimekdür ‘ilâcı ıssı ma‘cûnlarla ve ıssı otlarla kerefes tohumı ve râzyâne tohumı ve anison ve egirile tahtlil eylemekdür ve anison ve ud ve maştaği birle gülbeşeker ya gülnegibin yemekdür ve ya şekerile anison kaynadup içmekdür ve eger tabi‘atı kabızsa hûkne-i hadde eylemekdür. p.137

¹²¹ A kind of paste made from rose and honey.

¹²² A kind of syrup made from rose water.

¹²³ eger toğururken veyâ toğurduktan soñra katı za‘af müstevlî ola şekerle olmuş gülbeşekeri veyâ gülengübîni gülâbla ezüb süzeler içürel derhâl kuvvet bula ve ussı gitmiş olsa daği ussı ve ‘aqlı yerine yerine gele ve misk koçulatmak katı fâide ide eyü koçulu gülâb yüregine dürtmek ve içmek ve koçulmak ussı gittüğüne fâide ide ve eger gülbeşeker ele girmezse şekerî gülâbla ezeler içürel derhâl kuvvet bulub ‘aqlı yerine gele. p.590

¹²⁴ Gum obtained from the bark of gum tree, pistachio tree and similar trees, a kind of resin.

¹²⁵ Aloexylon agallochum lour

*mastakī*¹²⁶ (İbn-i Şerif, 25a). Furthermore, Ishak bin Murad recommends rose sugar to reduce the harms of apple sherbet, which is recommended against scorpion stings¹²⁷ (Ishak bin Murad, p7b).

5.6 Sugar as Medicine

The ability of sugar to impart a pleasant sweetness was underlined in Şirvani's cookbook. In addition, sugar was ground into a powder and used as a topping or garnishing for various dishes. Şirvani's cookbook provides us with the opportunity to learn about the various types of sugar. Even though only the names of the sugar varieties are provided, it is essential that they were written clearly. The different kinds of of sugar that have been detected in the book are white sugar (*ak şeker*, *beyaz şeker*), pure sugar (*saf şeker*), powder sugar (*şeker unu*), and sugar with musky (*miskli şeker*). This book exemplifies the blurring regarding the boundaries between enjoying one's food and eating for one's physical well-being, as previously mentioned. For instance, Şirvani, who provides a recipe for pain relief, states that ten dirhams of sugar should be added to the recipe to achieve the desired effect¹²⁸ (Şirvani, 2005, p.247).

Shefer-Mossensohn emphasized that the Ottomans believed that certain substances had curative properties, but she explained this with the "placebo" effect. For instance, she claims that drugs were used to “add flavor” to certain dishes

¹²⁶ eger kısan kiři řovuk mizāclu olsa bir denk dögülmüş üd-ı hindīyi ol mařtakī ile elma řuyuna kıatup içeler ve gülbeřeker mařtakī ile gāyet eyü ola ol kısan kıřinüň gözi za‘ıf olsa gözlerini baęlayup kısa fārię olıcaķ yüzini gözini řovuk řu ile yuya ve aęzını ılıcaķ řu ile yuya. p.420

¹²⁷ alma řarābı ve anuň řarābı ‘ akreb řokmuş kıřiye yarar ve anı çok yeyiceķ yel eyler, řařřa ki řam ve ekři ola, ıřlāhı cevāriř-i na‘ na‘ ve gülbeřekeriledür. p.22

¹²⁸ Veca‘ -ı mafāřıl için: Türbüd-i ebyaz on dirhem, sürincān on dirhem, daķķ edüp, eleyüp, on dirhem kıuyruk yaęı birle ovup, on dirhem řeker birle řaltı edüp, evvel gün iki dirhem, ikinci gün üç dirhem, üçüncü gün dört dirhem, dördüncü gün beř dirhem, beřinci gün altı dirhem, altıncı gün yedi dirhem, yedinci gün sekiz dirhem yeye, temcüd vaķtinde ve her řubķ gün řoęmadın řarāb-ı uřul içene yedi güne deęin gāyet mücerredür. p.247

prepared in the Ottoman imperial kitchen. Honey and sugar belong to this group of drugs. While explaining the intended purpose of honey and sugar, it was stated that both components combined with sour ingredients such as vinegar to formulate a balanced flavor. Several points are mentioned as she explains why honey was so popular. Honey was inexpensive and widespread; it also possesses nutritional qualities and was simple to integrate into pharmaceutical formulations. It was believed that sugar affected oral medications. Based on this theory, sugar facilitated the effects of these drugs (Shefer-Mossensohn, 2009, p.86).

The rationale behind Şirvani's utilization of sugar remains to be elucidated. Nevertheless, drawing upon our understanding of contemporary pharmacology, it is plausible to hypothesize that sugar usage in the recipe enhances its taste and promotes homogeneity. Sugar is only used in the recipe to sweeten it or decorate it, as demonstrated by several examples contained within the same book. For instance, Şirvani, who provides the instructions for preparing braised chicken with dried fruits known as *mahmudiyye*.¹²⁹ He suggests adding honey or sugar to chicken broth in order to give a sweet flavor (Şirvani, 2005, p.246). In *Akras-mükerrer*¹³⁰, a dish we believe to be a type of dessert, sugar is both the main ingredient and, according to Şirvani, some people add sugar flavored with fragrant spices after the dish has been cooked and consume it (Şirvani, 2005, p.223). Although some diseases can be cured

¹²⁹ Bir semiz tavuğı uvağ toğrayup oda koyalar ta kim bişe ve andan ol mākiyānuñ şuyına birez bal veyā şeker koyalar tā kim tatlı ola ve birez bādem ve qayısı ve rāzaqīyi ol tavuğ şuyına koyalar, andan pilāv eriştisini sayığı içre qavurular tā kim kızara, andan ol tavuğun sovuğ şuyına şalalar ve endüreler, qotaralar, pilāv gibi depeleme qotaralar. p.246

¹³⁰ It is a kind of dessert made with ingredients such as almond, rose water, sugar, bagel (simit) flour, oil. " ve bunun şan'atı oldur kim, simid unını ekşi hamirile koyu bulamaç edeler, qarışduralar, örteler, hamirlenince koyalar, dura ve çün-kim tamām alıdı, alalar yüz elli dirhem dögülmüş şeker ve elli dirhem qabı çıkmış ve dögülmüş bādām, gül şuyıyla ve cüllābıla qaşqatı yoğuralar, hatırları istedügi gibi qurşlar düzeler, ol hamirile kaplayalar, şirluganıla tavada qavurular, andan soñra bir bir tavadan çıkaralar, cüllāba banduralar ve üzerine müşkile beslenmiş şeker unın ekeler, yeyeler ve ba'zılar tavadan çıkarurlar ve üzerine eyü koğulu otlarla beslenmiş şeker ekerler, yerler."

by eating sweets, this does not necessarily imply that doing so is always for the patient's benefit. In the second part of his work, Eşref Bin Muhammed discusses the risks associated with eating an excessive number of sweets. "Eating sweets all the time causes malaria, upsets the stomach, and cuts the appetite. The flavor caused by the dessert smells sharp. Sour removes the damage of sweet, and sweet removes that of sour"¹³¹ (Eşref Bin Muhammed, 2022, p.73). Another situation where sweet foods are recommended to the person is to reduce the damage caused by spoiled water. İbni-i Şerif suggested that fatty and sweet foods should be consumed in a place where spoiled water.¹³²

In the basic logic of humoral theory, excess and unhealthy substances must be removed from the body in various ways to the body to find its balance. At this point, baths precisely fulfill this role. The medical texts examine the advantages associated with hammam visits and related practices. These procedures include instructions on how individuals with a temperament should use the bath and recommendations for what those individuals should and should not eat. Sugar also finds its place in these recommendations. According to Eşref Bin Muhammed, if a person goes to the hammam to gain weight, he should eat a fat chicken, and he should also eat rice pudding, especially with sugar: The person who enters the hammam with the aim of getting fat should enter with a full stomach. The person who is afraid of blockages in his body should drink the sherbet made by mixing honey and vinegar. But it is good for this person to eat when he leaves. If he does this, he will get fat and there will be

¹³¹ Taşluyı dâim yimek ısıtma getirür, mi' deyi süst eyler, iştiḥâyı keser. Taşludan olan hılṭ tiz ḳoḳar. Taşlunuñ ziyānınuñ tuzlu giderür tuzlunuñ ziyānuñ taşsuz. p.176

¹³² ve daḫi acı şū olan yerde cerb ve şirīn nesne yiyeler tā ki maḫarratın def' ide. 13a p. 409

no congestion in his body. It is good for such people to eat fatty chicken or milk and rice, especially with sugar ¹³³(Eşref bin Muhammed, p.196).

In *Yâdigâr* by İbn-i Şerif, we come across a very similar suggestion. He gives a paste recipe which was called *Ma'cûn-ı Firbehi*. İbni-i Şerif uses this recipe to gain weight. This recipe should be eaten after leaving the bath.

*Mugas-i Iraki*¹³⁴ and *behen-i ahmer*¹³⁵ and *behen-i ebyaz*¹³⁶ ve *zurunbâd*¹³⁷ and *keshira*¹³⁸, *kehruba*¹³⁹, poppy seeds, and sesame seeds are three dirhams each, these ingredients are pounded and sieved. It is mixed with the counter over medium heat. It is oily, but not too oily. It should be a little bit like *Büryan*. In addition, four hundred dirhams of pounded wheat which must be powdered, are mixed. Two hundred and fifty dirhams of sugar are beaten and mixed. Twenty dirhams of this paste are boiled with one hundred and fifty dirhams of fresh milk. It is thickened like a slurry. It is useful to eat with a piece of water (which must be cow fat) after leaving the bath. This is how it is done every day; it makes a person fat and gives strength¹⁴⁰ (İbn-i Şerif, p.504).

Headache is a disease that I encounter frequently in medical texts. These manuscripts present a diverse range of hypotheses regarding the factors that contribute to headaches. *Ishak bin Murad*, who is the author of *Edviye-i Müfrede*, mentions that headaches are either due to heat or cold. If the pain is due to excess

¹³³ Semriyeyin diyen kişi hammama tokla girün süddeden qorqarise sirkengübin içsün. Ammâ çıkıcaq yemek dahi yigdür. Zirâ semridür südde eylemez. Huşûsa semüz tavuq yiye ya südile birine yiye huşûsa şekerle. p.196

¹³⁴ Name given to the root of wild pomegranate (*Mugas*). It is known to grow in India and Iraq.

¹³⁵ *Statice Limonium*

¹³⁶ *Centaurea behen*

¹³⁷ *Zingiber zerinbed rosc (yabani zencefil)*

¹³⁸ A type of gum obtained from the plant *Astragalus (keven)*

¹³⁹ *Amber*

¹⁴⁰ Mâü'l-asel ile içüreler üç dört katre şirügan tamziralar bile içeler şıfat-ı ma'cûn-ı Firbehi ya'ni semizlük ma'cûni Hâce Ebü 'Ali Sînâ düzdüğü ma'cündür şan'atı budur mugâs-ı İrakî ve behmen-i ahmer ve behmen-i ebyaz ve zurunbâd ve kesirâ ve kehrubâ ve haşhâş tohumu ve sūsâm tohum her birinden üçer direm bu edviyeleri dögüb eleyeler ve şayağıyla mu'tedil od üzerinde qarışduralar şöyle kim cerb ola ziyâde yağlu olmaya büryan şüretlü ola azcık ola ve dört yüz direm dögülmüş buğday kovudan (?) ki yumuşak olmuş ola bile qarışduralar ve iki yüz elli direm şeker dögüb bile qarışduralar yigirmi direm kadarı [114b] bu ma'cûndan yüz elli direm taze süd ile kaynadalar bulamaç gibi ola ve koyıla ve bir pâre şayağıyla kim inek yağı ola hammâmdan çıkup yiyeler nâfi' ola her gün böyle ideler semirdüb kuvvet vire. p.504

blood, the remedy for this is cupping (*hacamat*) and feeding cold objects to the patient. While the author lists some sherbet names here, he also recommends these sherbets with sugar. If the headache is caused by bile, they should eat cold and wet objects and drink purslane (*tohmekan, semizotu*) with milk ¹⁴¹(Ishak bin Murad, p.56). In *Yâdigâr*, Ibn- i Sharif discusses the reasons of the headache. He gives a drug recipe which is called as *Eyâric-ı kebîr*.¹⁴² He writes that this mixture is good for headaches caused by bile, phlegm, and black bile. According to the recipes:

Eyâric-i faykara is ten dirhams, the yellow *helile*¹⁴³ shell is seven *dirhams*, the Kabuli *helile* shell is five dirhams, the *türbid*¹⁴⁴ is ten dirhams, the ginger is three dirhams, *aftîmun*¹⁴⁵ and *ustuhûd*¹⁴⁶ are six and a half dirhams each, *şahm-ı hanzâl*¹⁴⁷ is two dirhams, black and salt is two dirhams, Its use is three dirhams. It is drunk with fanid water, that is, with *şeker-i fanid* sherbet or pure sugar sherbet¹⁴⁸ (İbn-i Şerif, p.460).

Hacı Paşa, on the other hand, cites the fever of the head as the first reason while explaining the causes of headache. As for food, it shows cold objects and gives many sherbet recipes. In these sherbets, he suggested drinking the sherbet called *Nukl-ı hulv*¹⁴⁹ with sugar but did not go into details. In the rest of the recipe, it is

¹⁴¹ Bilgil ki baş ağrısı ya issiden olur ya şovukdan olur. Ammâ ol ki issiden olur yâ kan galebesinden olur ya şafra çoluğundan olur. Ol kan sebebendendür; ‘alâmeti’ oldur ki yüzünü rengi kızıl ola ve gözleri kızıl ola ve gevdesi issi ve tamarları yogun ola ve ağzı dadı tatlı ola. ‘ilâcı’ oldur ki kan alduralar ve hacâmat etdüreler ve şovuk nesneleri yedüreler, alma şarâbı ve ‘unnâb şarâbı ve temirhindi şarâbı ve hummaş şarâbı ve şekerile ‘unnab ve şekerile bezr-i katûna ve şarâb-ı nılüfer ve benefşe şarâbı gibi. gıdâ cevav ve isfanah aşı vereler. Ve ammâ ol ki sebebi şafradur ‘alâmeti’ oldur ki beşaru ve ağzı acı ola ve atı şuşaya ve bevli şaru ve tun ola. ‘ilâcı’ oldur ki şovuk ve yaş nesneler içüreler, karpuz ve hıyar gibi. Ve çok mekân sildin şekerile içürmek hem müfîddür. Ve ekşi nar ve ekşi yoğurt yemek hem aşşıdur. Ve kan aldurınayalar ve için işledeler . p.56

¹⁴² It is the general name given to a group of pastes used as a drug, Ayaric or Evaric.

¹⁴³ Plant that grows in warm climates and whose seeds are used as a laxative.

¹⁴⁴ *Convolvulus turpethum*

¹⁴⁵ *Cuscuta Epythimum*

¹⁴⁶ *Lavandula Stoechas*

¹⁴⁷ The name given to the inside of a watermelon called *Ebucehil*.

¹⁴⁸ Eyâric-i faykarâ on direm şarı helile kabı yedi direm kâbili helile kabı beş direm türbid on direm zencebîl üç direm aftîmün ve ustuhûdüs her birinden altışar direm şahm-ı hanzâl üç direm kara tuz iki buçukdirhem maḥmûde dört direm şerbeti üç dirhemdir fânîd suyuyla ya’ni şeker-i fânîd şerbetiyle veyâ sâde şeker şerbetiyle içeler. p.460

¹⁴⁹ A kind of syrup prepared from sweet herbs.

stated that pear, sour mulberry, watermelon, and sour cherry should be eaten with sugar.

Shortness of breath is one of the disorders that commonly addressed in medical texts. Ishak bin Murad shows non-fluid sputum as the cause of shortness of breath. According to him, the remedy must be a paste containing *hyssopus officinalis* (*çördükotu, zufa otu*) and named *ayaric-i faykara*¹⁵⁰ (Ishak bin Murad, M53a). Also, he suggested to add sugar and make soup (*cevav edeler*). The fact that the benefit of sugar is not given in this recipe makes us think that it might be used to reduce the bitterness in the taste of the mixture.

Some paralyzed people whose stomachs, hearts, and lungs are very hot should not use such hot remedies and hot pastes. It does damage. We have seen many people who made hot medicines, they did not benefit, but they were harmed. Cold objects may be more helpful. Nevertheless, these rarely happen. It happens in people with hot temperaments, saffron, and pure people. To such [128b], people should be cooked with care and light (*müfettiḥ*) objects that are not too hot, and whatever is cooked with sugar instead of honey¹⁵¹ (Ibn-i Şerif, 128b).

In the humoral theory, every object possesses its own nature, as was mentioned earlier. As a result, when preparing drug mixtures, the hotness, coldness, dryness, and moistness properties of the objects that would enter the mixture were also checked. This was done so that the mixture would be as effective as possible. For example, there were certain foodstuffs for which it was believed that the effect of sugar would be improved when used together, particularly in culinary preparations.

¹⁵⁰ Bu bir ‘illetdür ki kaçan hareket eyleye nefes tahlığı tevellüd olur. Ve ol öykende nefes yalında lezic balğamlar eğlenmekden olur. ‘ilâci zuka t̃abih̃in içmekdür ki içinde ayāric-i faykārā kaynamış ola. Ğidā şekerile cevāv vereler. p.62

¹⁵¹ ba‘ zı meflūc kişiler ola kim bunuñ gibi ıssı ‘ilāclar ve ıssı ma‘ cūnlar götürmeye ve mi‘ desı ve qalbi ve cigeri qatı ıssı vāki‘ olmuş ola ıssılar yidikce ziyān eyliye bir nıceleri gördük ıssı ‘ilāclar itdiler fāide itmedi ziyān itdi belki şouq nesnelerden rāhat oldu Lākin nādir vāki‘ olur ıssı mizāclu şafravī ve arıq kişilerde vāki‘ olur” oncalayın kişilere iḥtiqānla ve müfettiḥ nesnelerle kim qatı ıssı olmaya ve bal yerine şekerle pişüreler. p.517

Almonds stood out as one of the most notable of these foods. In *Müntahab-ı Şifâ*, some foodstuffs have been recommended to be used with sugar. For example, watermelon (*karpuz*) and sugar are recommended together in many recipes. To understand the reasons for this, first, it is necessary to look at the place of watermelon in humoral pathology. In *Müntahab-ı Şifâ*, the nature of watermelon is described as cold and wet¹⁵² (Hacı Paşa, p102b). The most important reason why watermelon and sugar are recommended together is to make the patient urinate. It is seen the clearest information about the nature of the watermelon in the In *Edviye-i Müfrefe*, there is additional evidence that discusses the nature of watermelon's mixture with sugar.

Ishak bin Murad wrote in this manuscript that watermelon is cold and moist, and it was emphasized that if the watermelon was eaten with sugar, it would open the urinary system¹⁵³ (Ishak bin Murad, M30b). Fever (*humma*) is a catch-all term for a group of illnesses characterized by a high temperature, of which there are multiple varieties (Çiçekler&Gürlek,2016). In *Müntahab-ı Şifâ*, according to the prescription for bile-induced fever, sugar, and watermelon juice will open the urinary tract and quench thirst¹⁵⁴ (Hacı Paşa, m122b). Almond and its oil is one of the foodstuffs that

¹⁵² karpuz şovukdur yaşdur şekerile yeyicek şu yolını işledür ve meşane ıssılığın giderür kamış ki ona farsice ney ve "arabca kaşab derler ıssıdır qurudur anuñ köki gey şovukdur südigi tams eder çıkarur. p.50

¹⁵³ karpuz, şovukdur, yaşdur,terligi arturur ve ıssiligi sır ve gıb ve muhrıka ısıtmalara karşı nâfi' dür ve şafra tizligin giderür ve şekerile yeyicek şu yolın işledür ve kavugun ıssiligin giderür ve şuşalığı keser. İssi mizâclulara muvâfıkdur ammâ pirlere ve şovuk mizâclulara yaramaz. p.42

¹⁵⁴ hummâ-yı şafrâvîde ekşer tabî' at kabz olur gönül dönmek ve şafrâ kuşmak çok olur evvel nevbette katırağ dutar ditredür sonra varduka az ditredür nevbetden ayılcağ derlemegile ayılır kârûre od gibi kızıl olur meger ki şafrâ dimâğa çıka kârûre aq ola pes eger burunı kanamazısa korkudur ki sersâm ola 'ilâcî oldur ki bu hummâda hiç kan almayalar meger ki kan gâlib olsa pes ikinci günde huşne eyleyüb şafrâ eksildiginden sonra kanı azacuk akıdalar şafrâyı ishâl eder şerbetlerden sikencübün ve şarâb-ı nîlüfer ve şekerile karpüz suyu ki hem idrâr-ı bevl eder hem derledür hem şuşalığı giderür ya tohmekân südiyle hıyâr tohmı ve kabak tohmı südin içüreler andan sonra şarâb-ı benefsecile ve şarâb-ı ıccâş ve şarâb-ı limün ve şarâb-ı nîlüfer ve şarâb-ı benefsecile şarâb-ı hummâz içüreler iki üç günden sonra nuķû' -ı hamız ya nuķû' -ı hulv içüreler ya hamîrile

should be used together with sugar in certain recipes. He recommended cooking opium poppy (*haşhaş*) and goat meat with almond oil and adding sugar to it for chest pain and cough related ailments¹⁵⁵ (Hacı Paşa, m71b).

The nightmare was also seen as a disease caused by the imbalance of body impulses for the pre and early modern period. If the nightmare is caused by phlegm in the body, İbni-i Şerif recommends a mixture called *deva-yi türbid*¹⁵⁶ to treat this phlegm. Indicating that *türbid* and ginger should be beaten thoroughly, İbni-i Şerif also uses the expression "*Süfuf* with sugar" to continue the recipe. *Süfuf* (*medical powder*) is the general name of drugs prepared in powder form (Önler, 2019, p.29), here it is found another usage area of sugar. Sugar is also used in the powdering of the mixture.

Sugar is found in treatments for various eye diseases. The fact that the typical form of rock candy (*nebat,nöbet şeker*) is referred to in these recipes is the aspect that draws the most attention to itself. İbni-i Şerif mention a recipe, but he did not give the exact name. "The blood of the two brothers (?), *çeşmezen*¹⁵⁷, *ak anzarut*¹⁵⁸ and rock candy (*nebat,nöbet şeker*), is taken in equal amounts from each, and after it is softly beaten, it is passed through a thin cloth and stored for use in times of need. It

bişmiş yaş kabağ şuyın içüreler tabî' atı hergün şâfila ya hûkneyile bir iki meclis yumşadalar eger göñül dönmek ve kuşmak çok olursa temürhindî ısladalar şeker üzerine süzeler içüreler. p.169

¹⁵⁵ ola müfiddür tatlu bādām yağı öksürüğe nâfi' dür benefşe şarâbı öksürüğe müfiddür haşhâş ıssıdan olan öksürüğü giderür rişte mu' tedildür koyun etiyile bişürseler ıssıdur ve eger keçi etiyile bişürseler şovuğdur yarı meyli şovuğdur çün hazın ola eyü gıdâ verür göksi yumşadur ve öksürüğe eyüdür haşşa ki bādām yağıyla bişüreler ve şeker katalar. p.111

¹⁵⁶ eger balğamdan olursa 'alâmeti oldur kim aqlamağı künd ola ve ağzı yaru çuk ola ve gövdesi süst Ola ' ilâc evvel balğamı gidereler ve devâ-yı türbid vireler şan' at budur türbid bir direm zencebîl bir dānik yumşak döğüb şekerle süfuf ideler üzerine süd şuyun içeler üç gün muqlı vireler gıdâsı kuşlar eti nohûdla ve dārçîn ile ola. p.519

¹⁵⁷ Paliurus spina-christi

¹⁵⁸ It is the glue of a thorn tree. It grows in Germany (it hapens in the land of german), eye grass.

is planted in the eye when needed. It will be helpful”¹⁵⁹(133a). İbni-i Şerif provides a formula for a moxibustion (medical oilment, *yakı*) that can be used as a remedy for the type of disease that is painful and does not sleep at night and has a lot of blood. It relieves pain, cleans the blood, is very useful in another one of his recipes. Rock candy (nebat,nöbet şekeri) is also used in this recipe. According to him, “*Harmel, that is, two dirhams of peganum, two direms of carob seeds, Four dirhams of rock candy (nebat,nöbet şekeri) These three are beaten and sifted through ibisîm, linen or cheesecloth, and mixed with rose water. It is spread on cotton and moxibustion is done. It is useful*”¹⁶⁰ (134a).

A recipe for eye discharge includes ten dirhams of white rock candy (nebat,nöbet şekeri) and five dirhams of sheb (?) It is stated that these two must be very well beaten. It was stated that after mixing, they should be beaten until powder in the mortar and then sprinkled into the eyes. Although rock candy (nebat,nöbet şekeri) is mentioned in these recipes, it is not specifically stated what kind of benefits this species provides for eye diseases. However, trying to treat eye diseases with medical powder in general may show us that sugar can help the powdering process. Sugar is mentioned in some of Hacı Paşa's recipes for treating eye pain in his book *Müntahab-ı Şifâ* , but it is important to note that sugar is not the primary component of this concoction. In more recipes for foods or medicines that are recommended, it is suggested that it be added to the mixture. For example, he says it would be good to

¹⁵⁹ iki kırdas kanı ve çeşmezen ve aq anzarüt ve nebât şekeri her birinden berâber yumşaq döğüb ince bezden geçüreler şaklayalar vaqt-i hâcetde göze ekeler nâfi‘ ola. p.518

¹⁶⁰ Harmel ya‘ ni üzerlik tohumu iki direm ve keçi boynuzu çekirdegi iki direm ve nebât şekeri dört direm bu üçünü döğüb ibrişim bezden ve kettân bezinden veya dülbend bezinden eleyeler ve gül suyuyla karışduralar ve atılmış penbe üzerine yazub gözün üzerine yaqı ideler nâfi‘ ola. p.52

give *erişte*¹⁶¹ with almond milk and sugar after sherbets given the day after the Laxative is used.¹⁶²



¹⁶¹ It is a kind of pasta prepared by laying and drying dough pieces cut like long thin strips.

¹⁶² M45b, p.81

CONCLUSION

Few commodities in the world are as highly valued as sugar. Sugar had the potential to change the cuisine, the labor regime and economy in every geography where sugar can be cultivated. Sugarcane, a plant of Southeast Asian origin, spread from New Guinea to India and China for a long time, and then to the Arabian Peninsula and Europe over Persia. This plant species likely underwent domestication as a food crop approximately 5000 or 6000 years ago. Interestingly, *Saccharum officinarum* (L), which is Latin for sugar cane, also means apothecary sugar. The provided etymological information provides a fundamental indication regarding one of the purposes of it. Sugar mentioned in the oldest medical texts, from some parts of Ayurveda, one of the ancient Indian texts, to Dioscorides' famous work *Materia Medica*, and its benefits were explained.

Sugar, once a valuable commodity, entered our life first as a medicine and then as a sweetener ingredient and also status signal. Throughout the course of history, sugar has been closely linked to notions of authority, aristocracy, and elevated social standing. Moreover, it has served various purposes such as a sweetening agent, medicinal substance, offering, and decorative element during festive occasions. The consumption of sugar was limited to a privileged few due to its high cost, challenging production process, and scarcity, thereby conferring exclusivity upon the elite.

This thesis presents a foundation for further discussion by addressing several research inquiries pertaining to the correlation between sugar and its therapeutic implementations during the pre-and early modern Ottoman medicine. The Ottoman understanding of medicine applied the humoral theory both in the health institutions

housed within the palace and in the hospitals built for the public, just like its contemporaries did. Is there a parallelism between the perception of sugar in the humoral theory corpus and its reflection and usage in Ottoman medical practices? Did physicians provide a recommendation regarding the utilization of sugar in preparing types of food? What did it refer to in humoral theory for sugar to be assessed as hot and moist? What kind of relationship exists between these attributes of sugar and its possible uses?

The Ottomans used sugar as a luxury consumption material in certain areas. Undoubtedly, the first of these areas was the cuisine, but it should be remembered that this use was valid for the dynasty and high-status people, especially the Sultan. Besides, being a luxury food makes it an expensive and powerful gift. Sugar also found a place in ceremonies, and many records from the early periods of the empire mention sugar being distributed at weddings. The role of sugar in weddings and entertainment was not limited to this; statuettes, *Nahıls*, candy gardens, and figures made of sugar were used primarily as a show of strength against the Sultan's subject.

The relationship between food and health significantly influenced the perceptions and behaviours of individuals in various societies of the pre-and early modern world. The initial driving force behind this study was a desire to investigate the role that sugar plays in Ottoman culture, particularly in light of its historical context. The convergence of medicine and cuisine within Ottoman culture represents a significant source of inspiration. The examination of the therapeutic uses of sugar, in accordance with the prevailing medical knowledge of the era, indicated a preference for the utilization of white sugar.

This study examined the medical uses of sugar in pre and early modern Ottoman medical texts by comparing *Edviye-i Müfrefe* by İshak bin Murad, *Müntahab-ı Şifâ* by Hacı Paşa also known Celalüddin Hızır bin Aliyü'l Hattab, *Hazâinü's-Saâdât* by Eşref Bin Muhammed, and *Yâdigâr* by İbn-i Şerif. Besides, I made an effort to investigate Şirvani's cookbook, which is the only cookbook that it is known from this period, in this setting; I decided to analyze the sugar and sweet foods in this manuscript.

As mentioned in previous chapters, medical texts give us the names of the following types of sugar: solid white sugar (*tabar zad*), fanidh (*pen net, stick, cheese sugar*), red sugar (*sükker-i ahmer, kırmızı şeker*), rock candy (*nebat, nöbet şeker i*), soleimani sugar, old sugar, white sugar (*sükker-i beyaz, ak şeker*). The reasons for using sugar in medicine can be grouped under two main headings. The first are the practical reasons for using sugar, and the second are the qualities attributed to its nature. Firstly, it was deemed an essential component. Sugar played a crucial role in producing liquid medicines in the form of sherbet. It was considerably simpler to use than *honey*. It enhanced the mixtures' consistency and diminished their bitterness. It also appears that some types of sugar are preferred in the production of certain drugs. For example, it also prolonged the shelf life of the mixtures, as the granulated material could be stored for a long time. In the form it was called *fanidh* sugar, if it is considered that this form is softer, it has been determined that it is used during beating to turn the mixture into dough, especially in İbn-i Şerif's *Yâdigâr*, in making pills. Secondly, It is seen that sugar or honey is added to the recipes depending on the temperament and disease of the sick person. I discovered in the section on halva that

the amount of sugar or honey used in the recipe could vary depending on one's temperament; however, the boundaries of this variation are very imprecise.

It is also possible that it is just a single culinary component of the dish. This shows us that the physicians of the period were aware of the practical use of sugar and its place in humoral theory. What both Hacı Paşa and Şirvani (it is known that he was also a physician) wrote about the content of halva must be more than a coincidence. It is hot and moist nature is the same in all four medical books I reviewed. These properties attributed to sugar have made it more prominent in mixtures used in the treatment of certain diseases. If these diseases are listed, cough and chest pain, occlusions in the body, phlegm, sore throat, stomach and decreasing the natural heat usually come to the fore. In addition, one of the most important properties attributed to sugar is that sugar helps the drug mixture spread throughout the body.

Edviye-i Müfrede, *Müntehab- ı şifâ*, *Yâdigâr* and *Hazâinü's-Saâdât* have proofed these evidence. Another finding encountered when examining the medical uses of sugar is that whether sugar is old or new is an important detail in its medical use. Take an example, in *Müntehap-ı Şifâ*, Hacı Paşa attributes hot-moist properties to the new sugar, while he attributes dry-hot properties to the old sugar. In *Edviye-i Müfrede*, Ishak bin Murad states that as sugar gets older, its strength increases. Additionally, the type of sugar used is specifically stated in certain recipes. As an example, red sugar and solid white sugar are typically the least commonly used sugar varieties. Except for red sugar, all the sugar mentioned above is classified as refined white sugar. Its nomenclature indicates that red sugar is characterized by lower quality refinement. For instance, the presence of red sugar is exclusively observed in

the products *Müntahab-ı Şifâ* and *Edviye-i Müfrede*. The consumption of red sugar can induce thirst and it is useful for prevention of gas formation and phlegm within the body. According to the *Edviye-i Müfrede*, it is mentioned that solid white sugar (*tabar zad*) possesses medicinal properties that can alleviate natural heat.

The manuscript known as *Müntahab-ı Şifâ* contains a specific recipe intended for the treatment of diarrhea, with no additional therapeutic effects mentioned in other manuscripts. Typically, fanidh sugar is observed to be utilized in paste preparation in *Yâdigâr*. However, I have encountered an instance where fanidh sugar is employed in producing pills, as documented in the recipe provided in *Müntehab-Şifâ*. Rock candy (*nebat or nöbet şekeri*) is another topic frequently discussed in the three medical manuscripts, except *Edviye-i Müfrede*. It is the most well-known type of sugar used medicinally. In addition to using certain types of sugar in medical prescriptions, various sweets have also been prescribed for therapeutic purposes. As discussed in more detail in various parts of the thesis, the preparation of desserts/medicines such as rose jam halva and sherbet with sugar or honey was recommended, depending on the person's temperament and illness.

This thesis imply that an enhanced understanding of the utilization of sugar in Ottoman medicine can be gained through an examination of the Ottoman medical manuscripts from the 14th and 15th centuries. This exploration sheds light on the perceptions, production and consumption practices, and curative endeavors associated with this substance. Its close connection to the humoral theory further enhanced the product's relationship with medical purposes.

This thesis aims to contribute to the existing body of literature on food history in the Ottoman Empire by examining the historical references to sugar in Ottoman

medical literature during the 14th and 15th centuries. The analyze of a specific commodity holds a significant place in food history. Undoubtedly, the primary contribution of these studies to the field lies in their capacity to facilitate comprehensive examinations of commodities. Through such in-depth analyses, previously overlooked details are brought to the forefront. The situation is analogous in the case of sugar. This thesis aims to elucidate the parallels among the various types of sugar prevalent during a specific historical period, the prevailing medical stance and public perception of sugar, and the content of cookbooks from that era. This analyze is conducted through an examination of the medicinal applications of sugar during specific centuries. A comprehensive examination of the relationship between food and health within the context of Ottoman medicine can enhance our comprehension of individuals' daily habits and attitudes toward the relationship between food and health.

The primary objective of this thesis is to examine the therapeutic implementation of sugar as documented in pre- and post-medical texts from the Ottoman Empire. In the context of the study of food history, the valuable insights provided by medical texts from the pre-modern and early modern eras are worth noting, as they contain abundant references to various food items. These texts provide valuable insights into specific geographic regions' indigenous flora and fauna. Furthermore, it elucidates the underlying principles of the humoral theory and delineates the appropriate dietary framework that should be adhered to based on these principles. The recipes formulated by physicians for managing different ailments, considering an individual's temperament, also shed light on historical attitudes towards food and its diverse associations with human health and wellness.

Hence, the chosen excerpt for the thesis furnishes insights into the diverse types of sugar and the manifold ailments for which sugar is employed as a remedy. In this study, I tried to show the importance of sugar in Ottoman medicine and humoral pathology by examining four medical manuscripts and one cookbook.

In the examination of sugar and its characteristics, it is imperative to gain a comprehensive understanding of the therapeutic applications of sweet foods. It has been revealed that the place of sugar in the Ottoman medicine and culinary understanding is similar to both its contemporary societies and its predecessors, as the literature shows. Şirvani, Hacı Paşa and İbn-i Şerif, Eşref Bin Muhammed, Ishak Bin Murad can be considered as contemporaries of each other. The fact that their medical manuscripts and a cookbook contain recipes that are strikingly like one another demonstrates the permeability of the boundary between the realms of medicine and culinary pleasures.

In a nutshell, although the following centuries are not included in the time period of my thesis; I should note that according to medicinal manuscripts of later era I may suggest that the application of humoral theory and the medical uses of sugar will continue during the following centuries. As for example according to the registers of imperial confectionary known as Helvahane manuscript (*helvahane defteri*) most of the medicines were produced in the confectionary room in the Ottoman palace during the 17th century. We should mention that the register in the manuscript covers approximately 159 years. The manuscript includes 186 different drug prescriptions and both of these 186 different drug prescriptions were categorized into ten different groups (Terzioğlu, 1995, p.xxvii.). Although this book I examined is dated to the seventeenth century, it is valuable in terms of understanding

the continuity of the use of sugar in Ottoman medicine (Terzioğlu, 1995, p.xxvi).

According to this manuscript , I can say that the consumption of sugar and its presence in medical manuscripts occur similarly. For example, It is seen that 40 dirhams of *sükker-i beyaz* (white sugar), is used in a recipe called *muglab*, which is given to remove phlegm (the *Helvahane* book,p. 36).

In addition, it is seen that 100 dirhams of sugar is used in a sherbet recipe for cough (the *Helvahane* book, p. 46). In some recipes, I come across sugar in information about drug making techniques. In a pill recipe with a laxative function, I see the expression “to be swept away with sugar.” Just like in the medical books I reviewed, the *helvahane* book does not clearly explain why sugar is used in prescriptions, but there may be two main reasons why sugar is used in pill making. It may be that it helps the mixture come into pill form and removes the bitterness in the taste of the mixture.

Sugar is a commodity that lends itself to various qualitative and quantitative research studies. The field of Ottoman-Turkish food history has limited studies specifically focused on the cultural and symbolic value of commodities. For example, the symbolic meanings of sugar can be studied as a singular subject. In the light of many examples were shown Ottoman literary corpus have included several proverbs, idioms in related to sugar. Numerous metaphor about sugar are encountered within literary sources. While sugar is associated with sweetness and a smiling face, it has also been used to mean the exact opposite. In exemplification, *şeker renk* means a friendship relationship that is not going well, with a coldness in the middle. Thus, it can be observed that sugar held a symbolic significance within the social life of the Ottoman Empire. Examining topics such as the role of sugar in

traditional literature and its portrayal, in visual representations can be considered scholarly efforts that demonstrate the qualitative significance of sugar and offer substantial contributions to the field.

The prevailing narrative surrounding sugar in contemporary times, often referred to as the "infamous mythology," warrants further examination and monitoring. The examination of sugar necessitates the implementation of a multidisciplinary approach. The critical discourse surrounding sugar in contemporary times can be examined through the lens of consumption anthropology. Today, sugar is a delicious poison for us. Certainly, this is a different subject for conducting a research on its toxic narratives. In the centuries when sugar was used in the medical field, criticisms against it also began. The narrative surrounding the increase in notoriety of sugar consumption is a phenomenon that has been around for a while. The utilization of sugar in the medical domain experienced a shift in perception, transitioning from widespread acceptance to a more critical standpoint.

Moreover, some questions still need to be answered about the production of sugar, and these questions are waiting for valuable researchers. The outcomes of a quantitative research study about on the economic activities of artisans selling sugar and confectionery will provide insights into the perception of sugar within Ottoman society.

Lastly, I would like to end my words with a quote from Véronique Pitchon. Sugar was an area where the fields of food and medicine overlapped so that its prominence in diet and cookbooks was remarkable (Pitchon, 2015, p.31).

APPENDICES

Appendix A

Glossary

Abluc- abluj (Persian): White sugar-candy; powdered sugar; the sugar-plant.

Ak şeker: White Sugar

Akide : Candy-Rock

Bayat şeker/Eski Şeker: Old sugar

İngiliz şeker: British Sugar

Fanid, Farid, Faniz, Peynir, Parmak Şeker, Kalem şeker: Fanidh, Pennet, Penide, Stick, Cheese sugar. White sugar, which is rock candy. In other words, Paniz is the name of sugar, which is also called stick sugar. It is a candy placed in a mold with two equal sides, also called *parmak şeker*. Some interpret it as rock candy, and others as cheese candy. It is also called halva, made from sugar, barley flour, and safterencübin. Ahmed Cavid points out that, in Istanbul, fellah Arabs make it with honey and sell it as reed halva (kamış helvası).

Frenk şeker (Sükker-i Efrenci): European Sugar

Gülbeşeker: Rose Jam

Ham şeker- Kızıl şeker- sükker- i ahmer: Muskovado, Red sugar, Unrefined Raw Sugar.

Kelle şeker : Loaf sugar

Miskli Şeker: Sugar with musky

Mi'âd Sükkerî/ Sükker-i harcî: Inferior quality sugar

Nebat Şeker- Nöbet Şeker : Rock candy, it is the crystallized sugar that is used as a medicine among the people.

Perverde: Pudding made with starch, sugar, water, or fruit juice

Peşmine: A type of halva separated by vermicelli.

Saf şeker: Pure sugar

Sükker: Sugar

Sükker- i gubâr/toz şeker: Granulated Sugar

Suleimani/Soleimani: Süleymani, A kind of white sugar, it is thought to have taken this name because it was produced in the city of Sulaymaniyah, Iran.

Şekeristan: A sugar-refinery; a plantation of sugar-canes; a sugar-chest.

Şeker Kamışı: Sugar cane, *Saccarum officinarum* in Latin.

Saccharum spontaneum: Wild sugarcane

Şerbet: Medicine in liquid form, especially laxative.

Tabarzad/Sükker-i Mükerrer: Rock-salt; solid white sugar, rock candy

Appendix B

Recipes

Argunşah, M., & Çakır, M. (2005). *15. Yüzyıl Osmanlı Mutfağı Muhammed bin Mahmûd Şirvanî*. İstanbul: Gökkuşbe.

“Şekerli kuru helva”

Faydaları: Beyne kuvvet verir, bedeni semirtir, zayıf kimseler için gayet uygundur.

Tarifi: Yüz elli dirhem şeker otuz sekiz dirhem suyla kalaylanmış tencerede yumuşak ateş üzerinde ezilir, köpüğü alındıktan sonra kıvama gelene kadar kaynatılır. Kıvama geldiği, suya veya ağza konduğunda sakız gibi olmasından anlaşılır. Sonra bu karışım mermer üstüne dökülür, buna yirmi beş dirhem kadar kabuğu çıkmış ve dövülmüş badem katılır, yoğrulur, yayılır ve soğuyup kıvama gelinceye kadar bekleyeler. Sonra gereğince kesilip yenilir.”¹⁶³

“Sabuni Helva”

Faydaları: Beyne kuvvet verir, meniyi artırır, balgamı mideden ve beyinden atar, sıcak mizaçlılara, çocuklar ile felçlilere çok faydası vardır, bedeni semirtir, cildi güzelleştirir.

Tarifi: “Dilendiği kadar ak şeker, az suyla kalaylanmış tencerede yumuşak ateş üzerinde [94b] ezilir, köpüğü alınır, şerbet kıvamına getirilir, beklemeğe bırakılır, daha sonra istendiği kadar susam yağı, kalaylanmış tencerede biraz kaynatılır ve üzerine yapılan şerbetten konulur. Her yüz elli dirhem şekere yirmi dirhem süzme bal konulur, kıvama gelinceye kadar karıştırılır, gereğince nişasta suyla ezilir, karışım üzerine tencereye bırakılır, karıştırılır, kalan şerbet de karışıma az az eklenir. Kalan şerbet eklenince ve malzeme kıvama gelince, üzerine nişastanın dörtte biri kadar tatlı

¹⁶³ p.110

badem ekilir, yine kıvama gelinceye kadar karıştırılır, sonra sahanlara konulur, altına üstüne güzel kokulu baharatlarla beslenmiş şeker unu ekilir, yenilir.”¹⁶⁴



¹⁶⁴ p.111

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