HUMAN AND SOCIAL SCIENCES IN FOOD
DOI: 10.12957/demetra.2021.55945

DEMETRA
Alimentação, Nutrição & Saúde

Letícia Pereira Leão[1]
Nadja Maria Gomes Murta[2]

[1] Universidade Federal dos Vales do Jequitinhonha e Mucuri, Departamento de Nutrição. Diamantina, MG, Brasil.

[2] Universidade Federal dos Vales do Jequitinhonha e Mucuri, Departamento de Nutrição, Programas de Pós-Graduação em Saúde, Sociedade e Ambiente e em Estudos Rurais. Diamantina, MG, Brasil.

Correspondência
Nadja Maria Gomes Murta
nadja.murta@ufvjm.edu.br

The therapeutic use of food in the mid-19th century

O uso terapêutico dos alimentos em meados do século XIX

Abstract

Introduction: During the 19th century, emerged the first information about the chemical substances contained in food. From these discoveries, food hygiene as a therapeutic mean established criteria for the prescription of nitrogen (nitrogen) and carbon (carbon), as well as dietary recommendations in the different life cycles and convalescent states. *Objectives*: This work sought to analyze how and for what purposes some foods whose chemical composition was characterized by the presence of nitrogen (nitrogen) and carbon (carbon)were prescribed . *Methods*: The visiting notebooks (medical records) of vessels found in the Historical Archive of the Portuguese Navy, medical treaties of the period and publications referring to the history of science and nutrition were used as a research source. *Results and discussion*: In the consulted notebooks (years 1859 and 1863), meals based on animal foods (rich in nitrogen), such as meat and chicken broths, were the most prescribed to patients, as they were based on principles of the fibrinous diet, which promoted tissue repair and growth of organic matter. *Final considerations*: Over the past two centuries, many theories about the function of food have changed, but a significant part of their assumptions were made during the 19th century.

Keywords: Nutrition Science. Nutritional Recommendations. Diet therapy. Story.

Resumo

Introdução: No decorrer do século XIX surgiram as primeiras informações a respeito das substâncias químicas contidas nos alimentos. A partir dessas descobertas, a higiene alimentar como meio terapêutico estabeleceu critérios para a prescrição de azote (nitrogênio) e carbone (carbono), bem como recomendações alimentares nos diferentes ciclos de vida e estados de convalescença. *Objetivos*: Este trabalhou buscou analisar como e para que fins eram prescritos alguns alimentos cuja composição química era caracterizada pela presença do azote (nitrogênio) e carbone (carbono). *Metodologia*: Foram utilizados como fonte de pesquisa os cadernos de visitas (prontuários) de embarcações encontrados no Arquivo Histórico da Marinha Portuguesa, os tratados médicos do período e publicações referentes à história da ciência e nutrição. *Resultados e discussão*: Nos cadernos de visitas consultados (anos

1859 e1863), as refeições à base de alimentos de origem animal (ricos em azote), como os caldos de carne e de galinha, foram as mais prescritas aos doentes, pois se pautavam nos princípios da dieta fibrinosa, que promovia a reparação tecidual e crescimento da matéria orgânica. *Considerações finais:* Ao longo dos dois últimos séculos, muitas teorias a respeito da função dos alimentos se modificaram, mas parte significativa de seus pressupostos foram constituídos no decorrer do século XIX.

Palavras-chave: Ciência da Nutrição. Recomendações Nutricionais. Dietoterapia. História.

INTRODUCTION

The late 18th and early 19th centuries were marked by theories that sought to explain the origin of nutritional processes. From the chemical point of view, it was intended to clarify how the main elements that form organic matter, oxygen, "carbon" (carbon), nitrogen and hydrogen were supplied to the organism and how they were fixed or eliminated (p. 18).[1]

The foundations of modern chemistry around heat generation were strongly influenced by the scientific propositions postulated by Lavoisier. Thus, it was concluded that the formation of heat was a procedure resulting from the burning of these elements (carbon, nitrogen and hydrogen) through interaction with oxygen. At the end of the 18th century, nitrogen was conceived as a characteristic component of the animal substance, and came to be called in the scientific milieu as "nitrogen".[1]

According to the scientific assumptions of the time, it was believed that the substances present in food had the function of "repairing the losses suffered by the organism and guaranteeing its functioning and growth material".[2] In the period in question, the theory prevailed that digestion was a mechanical and fermentative process. It was assumed that the fibers of the animal tissues selected the food substances around them and sucked the most appropriate ones. This mechanism became known as assimilation, which can be compared to what is now called anabolism (a process that builds complex molecules in the body).[1] Thus, animal foods, compatible with the organic matter of the human body, would be assimilated. Food from the plant kingdom, with a lower proportion of nitrogen, would first be animalized - transformed into animal material - for later assimilation.[1]

A reverse procedure occurred in parallel with the assimilation process. It was assumed that, in order to perform its vital functions, the organism consumed the substances that made up its tissues, which was called disassimilation. In current scientific language, this process represents what is known as catabolism (breaking up of complex molecules into smaller molecules). Thus, it was believed that a wear mechanism and a repair mechanism for organic matter occurred concurrently.[2]

Later, foods made of nitrogenous substances would be classified as plastics or nitrogenous - capable of being converted into tissue material. Sugars, starch and fats have been classified as respiratory or non-nitrogenous foods - responsible for the formation of heat.[3]

This work sought to analyze how and for what purposes some foods were prescribed whose chemical composition was characterized by the presence of nitrogen (nitrogen) and carbon (carbon). The research was elaborated around the medical prescriptions that emerged in Europe in the 19th century, using documents and notebooks of visits (medical records) of vessels contained in the Library of the Portuguese Navy, specifically in its Historical Archive, which describe the rations (daily food portion) intended for sailors. The medical treaties of the time and publications on the History of Science and Nutrition were also consulted.

The men of the armed forces, among them, the sailors - who will be treated in this work - were the first to have their food regulated by the state power. Rations were formulated so that food would not run out during travel, to guarantee health and meet the specific needs of patients.[4]

Food as a way of guaranteeing and improving health status was integrated with the concepts of Hygiene, a discipline of Medicine that was defined at the time as "the study of things that are useful or harmful to man, in order to prolong life and conserve health."[5] Thus, the care given to sailors in hospitals and wards on board vessels and to other travelers was the responsibility of surgeons and other doctors who worked on the basis of Naval Hygiene.

In the course of the 19th century, in Portugal,12 ration tables (daily food portion) were formulated and published, which were aimed at both sailors who were on land (at anchor) and at sea (sailing), the largest amount

being (75%) published from the middle of the 19th century, due to the consolidation of the power of modern medicine and "the advent of the first food composition tables".[4]

Food hygiene as a therapeutic means

Jean Baptiste Fonssagrives, a renowned 19th century hygienist and author of a vast collection of scientific publications of the period, was one of the propagators of the knowledge that related eating habits to health conservation in different life circumstances.[6] In his book *Higiene Alimentar dos Enfermos, dos Convalescentes e dos* Valetudinários[a], he addressed how age, sex, genetic inheritance, physiological status, physical and intellectual activity and social conditions directly affected the diet of individuals. In this sense, a broad view of the food phenomenon is observed in this 19th century physician.[7]

Ferreira,[8] another nineteenth-century doctor, defined food "as any mineral, or organic substance, that introduced into the digestive tract serves to repair losses, and contribute to the development of the organism" (p. 14). He described that the controversies existing in the scientific milieu made it difficult to develop an exact definition for food, even though it was previously studied, and the knowledge about its composition and function was elucidated. For him, adequate intake of these ones was not only a means of repairing the losses suffered by the body, but also a way of promoting them to a level of "energy medication".

According to the author,[8] the list of existing foods was quite extensive and, with the exception of sea salt and "phosphato de lime", all were removed from the animal and vegetable kingdom. Based on this idea, he divided food into three distinct groups: albuminoids, fatty materials and "sugars and starches". For him, the classification in plastics and respiratory, which prevailed, could even be fair, but not indisputable, since there was already enough information to overcome this division.

Recommendations for nitrogen and carbon

In his Naval Hygiene Treaty, Fonssagrives addresses how the recommendation of these substances would be for a sedentary individual (essential food for the preservation of life), and for those involved in work activities (man of work). The ration needed to guarantee good health to a sedentary man should contain 2 g of nitrogen and 42.02 g of carbon for every 10 kg of weight. However, this recommendation would undergo changes when aimed at a "working man": 12.50g of nitrogen and 45g of carbone for every 10 kg of weight to complement the strength that his job demanded.[6] Such findings make it possible to break with the idea that nutritional recommendations were established at the beginning of the 20th century, since these were already incorporated in medical treaties of the 19th century.[4] Furthermore, it is observed that in the period in question the concern with the workers' food was already related to the optimization of productivity.

The author also devoted himself to analyzing the distinction between the daily food portion (ration) of different navies, as can be seen in Table 1, noting that the ration of Portuguese manning contained a higher proportion of nitrogen compared to the English and French Navy, that is, it was more "animalized" (reparative) than these ones. However, it was less nitrogenous than the Belgian manning ration, being this the most repairing ration of all. With regard to the presence of carbon (carbon), the Portuguese diet had a lower concentration compared to the others, which points to a lower supply of respiratory foods (responsible for the formation of heat) in its constitution. As for the concentration of fat, the ration of the Portuguese manning had a lower amount when compared to the Belgian and French Navy, being higher only to the English .[6]

Table 1. Composition of the sailors' rations on board in different nationalities.

Countries	Quantities		
	Nitrogen	Carbon	FAT
Belgium	41,66g	594,79g	113,74g
France	26,04g	448,47g	97,87g
England	30,91g	540,85g	34,24g
Portugal	33,68g	413,11g	85,93g

Source: Fonssagrives (1862a, p.468).

Food in life cycles

For Fonssagrives,[7] newborns represented the age group with the greatest susceptibility to infections of the digestive tract. In these cases, the adoption of a dairy diet was recommended, in which milks from different origins occupied a central place in the diet. In the specific case of sick newborns who already consumed "porridge and broth", it was recommended that they make exclusive use of breast milk, which shows that in the 19th century the benefits of breastfeeding were already recognized. In cases of recurrent diarrhea and cramps, mothers were advised to modify their diet, increasing the interval between meals and consuming lighter foods.

The author describes that after weaning and dental evolution, when the child was already exposed to the diet of adults, their food in cases of disease was no longer peculiar. The indication was that the child, in any event, had a relatively strong diet. In adolescence and adulthood, common dietary rules would apply. Age was not a sufficient condition to determine the function of food for individuals in a state of morbidity, with the exception of some cases in early childhood and old age.[7] It should be noted that the absence of dietary recommendations for illnesses in adolescence may be associated to the fact that this was only recognized as a phase of life from the twentieth century.

Old age was understood as a moment in which man returned to being alone and concentrated his strength in the fight against the organic deterioration that threatened him. Although there were dietary recommendations for this stage of life, there was no universal regime for the elderly's state of recovery. It was advised that they be offered few meals and in smaller volumes, both to prevent digestive discomfort and to avoid imperfections at the “dentures” (prostheses).[7]

For elderly people affected by brain diseases, the diet should be based on light foods, offered in small quantities and with predetermined times. In the presence of pneumonia, the recommendation was that they eat more frequently, with food withdrawal being contraindicated. Broths and soups were seen as restorative for this disease. In general, the elderly's diet was responsible for recovering their spirits. In this sense, it was advised to consume stimulants such as wines and condiments.[7]

Food in diseases

In order to exemplify the importance of adequate food during illnesses, Fonssagrives[7] reveals that the allocation of food as an energy medication was not related to their (pharmacological) drug function, since they would not be able to replace the action of certain compounds chemicals. However, food was considered a great ally in the treatment of diseases. It also clarifies that the correct use of food was the most appropriate way to preserve health, since the medications formulated in laboratories were transitory, whose action persisted for only a few hours.

The importance given to the feeding of the sick was described in the study by Esteves,[9] because at the time it was believed that "malnutrition" (insufficient food) during illnesses consumed the strengths of individuals, and that if they were not properly treated, with a primary focus in strengthening the components of the diet, they could soon reach death. In this context, Fonssagrives[7] described five types of "special diets", aimed essentially at patients: negative or abstinence diet, dry diet, vegetable diet, fibrinous diet and dairy diet.

The abstinence diet was based on the relative suppression of food, and should not be understood as the absolute deprivation of the same. As a result of the absence of some foods, the process of disassimilation (catabolism) was optimized and the process of assimilation (anabolism) became slower. The absence of the nutritional principles obtained through the diet meant that the digestion processes sought in the body itself the means for destruction and organic renewal.[7]

It was indicated in several inflammatory diseases, but the most successful application would be in the treatment of obesity. It was recommended that the abstinence diet be combined with exercise and the use of purgatives. The foods allowed should be of the "respiratory" class (rice, vegetables, bread, etc.), because their rich carbon composition increased the heat production processes (catabolic) to the detriment of the repair and growth mechanisms (anabolic processes).[7]

The dry diet was based on a considerable decrease or even suppression of liquid foods and aimed to reduce the excess water that made up the organic tissues. The reports found in the literature reveal that in the early days of this diet, patients were very thirsty, but little by little "they created a certain type of tolerance by the power of habit, or by the adaptation of the body in response to lack of fluids" (p. 461) .[7]

In these conditions, it was assumed "that the body fluids became more dense, the organs decreased in size, the subcutaneous veins were flattened, the pulse became slower, the urine darker and more concentrated, in addition to the presence of constipation and fast weight loss" (p. 464) .[7] This diet was indicated in cases of polyuria, dyspepsia, edema and, in some emergency cases, the dry diet was considered a facilitator in the absorption of drugs when their immediate action was intended. It was recommended a gradual decrease in fluid intake and at least two baths a day as a way to alleviate thirst. The foods allowed were low water fruits, meat, fish, bread and thick soups.[7]

The vegetable diet was composed almost exclusively of roots, plants, fruits and some herbs. Fonssagrives[7] observed that people who were submitted to this type of diet had better health status. It was considered quite favorable in cases of scurvy already advanced and severe constipation. Cabbage and watercress were considered excellent sources of healing in the presence of this disease. Fruit consumption was assumed to relieve gout attacks and that dates were highly effective in nervous disorders and urinary tract infections. In addition, the grapes were recognized for their virtues in the control of liver diseases, hemorrhoids, among many others. It was considered that the diet restricted to vegetables and fruits for a long time would be insufficient to meet the needs of the organism, demonstrating that, although the importance of vegetables in the diet was well established, it was recognized that other food sources were necessary for a complete diet .

The "fibrinous" or animal diet was predominantly composed of meat, being indicated for all cases in which "nutrition was compromised" (p. 506), [7] as it was able to restore the blood composition and restore the individual's energies through its power of plastic repair (formation of organic matter). The broth was chosen by doctors as an essential element in the rehabilitation of patients. Fonssagrives instructed that approximately one kilogram of meat, four liters of water, 400 grams of green vegetables and salt were used to prepare the medicinal broth.[7]

Anemic, malnourished individuals with chronic diarrhea and dysentery would enjoy great benefit from this diet. In the latter, the consumption of raw meat was recommended, which often resulted in aversion from patients, with broth being the second option. For people with diabetes, foods of animal origin were considered the safest way to control the disease, since, when digested, they did not increase the amount of sugar expelled in the urine.[7]

Finally, the dairy diet, as previously mentioned, was based on the replacement of almost all liquids with milk consumption. This was considered one of the most complete foods in terms of nutritional principles, due to its rich composition in carbon and nitrogen. It was incorporated into the patients' food therapy for cases that needed a fast, moderate and restorative diet. The most used milks were from cow, goat, woman, donkey and mare.[7]

The treatment of diseases by offering special diets was considered one of the main factors in the recovery of patients.[9] Fonssagrives demonstrated in his book how these and other dietary recommendations were carried out in the hospital. His studies on diet in hospitals included the constitution of rations and the ways and means of feeding.[7]

In order to meet the needs of different classes of patients, diets should be varied in terms of food supply, respecting the rules of each type of diet (negative or abstinence, dry, vegetable, fibrinous and dairy), since the ordinary (free) diet was consisted of broths, soups, bread, vegetables, fruits and foods of animal origin.[7]

With regard to the number of meals intended for the sick, the author recommended that they be three to four per day, and for good nutrition, at least two should be more substantial (with more food) and one light (soups and broths). Despite these recommendations, the number of meals and the times they were offered were subject to the patient's physiological state, the liveliness of appetite, the need for repair and the administration of medications.[7]

For patients hospitalized in serious condition and with obstruction of the upper digestive tract, diets were administered by means other than the oral one. Unlike modern nutritional support (enteral / parenteral), this procedure was considered very precarious, but it was seen as the last means to protect patients from hunger and starvation in hospitals. Through risky surgical procedures, tubes were administered through the respiratory route, through the esophagus or stomach and, in the absence of these, a channel for the passage of food would be placed directly in the intestine or administered via the rectal.[7]

The food solutions offered under these conditions were based on chicken broth and gelatin (meat broth) or a concentrate for cooking barley with milk and two egg yolks. Some rules for the application of this type of diet determined that the foods applied through these channels previously undergo artificial digestion. It was advisable to slightly acidify the broths with a few drops of hydrochloric acid or to crush the vegetable foods in the stomach of a recently slaughtered ox.[7]

The food needs found in visit notebooks of wards on board

The ward's visit notebooks refer to a kind of medical report used by doctors of Portuguese Navy ships in the 19th century, where diseases or complications that affected the sick were recorded, including drug treatment and dietary recommendations in each of the cases. For this research, we used the information contained in the visit books of the nurses on board the Corvette Dona Estephania (warship) whose responsible surgeon was Dr. José Antonio Maia,[10] and the Barca Martinho de Mello (sailing vessel with three masts), under the responsibility of the surgeon Dr. José Maria de Mello Dias.[11] In this last ship, the records found in the notebook are from June 8 to September 30, 1863; the data entered in the visiting book of Corvette Dona Estephania correspond to the period from May 21 to June 27, 1859.

According to the Decree of 22 December 1852, of the Naval Health Service of the Portuguese Navy, the location of the wards on board would be defined by the surgeons responsible for each ship, who were responsible for choosing a location with the following requirements: good hygiene condition , free air circulation and absence of any object that was not used for health care. Meals destined for these places should be prepared by sailors at the service of the sick, in a specific kitchen and stove. It was ordered that the utensils used by people with contagious diseases

were thrown overboard. Circulation in these spaces was allowed only to those who provided some service to the sick or with authorization granted by the surgeon.[12]

With regard to the dietary prescriptions found in the consulted notebooks, there was a predominance of foods of animal origin - meat broth preparations (beef) with rice and chicken broth.[10,11] It is worth noting that in these broths meats were not the only element of the dish that was accompanied by vegetables too. Such recommendations were based on the precepts of the "animal or fibrinous" diet, which was rich in nitrogen. This compound was formed by gelatin (collagen), fibrin and albumin (protein portion), which, according to current theories, were associated with improved blood flow through tissues, with consequent plastic repair during illnesses. The broths offered to patients in the wards were prepared in such a way that, in the cooking process, the gelatin was completely extracted from the solid parts of an animal.[7]

In 1859, the most prevalent diseases in the notebook were aneurysm, angina, bronchitis, chronic phlegm, dysentery, gastric embarrassment (gastritis), intermittent fever, syphilis and lower limb ulcers. For dysentery, aneurysm and angina, chicken broth with rice was indicated, while for the others, meat broth (beef) with rice was recommended. In the specific case of intermittent fever, in addition to the meat broth with rice, the consumption of citrus lemonade was prescribed. For chronic catarrh, there was a prescription for meat broth with rice for breakfast and tapioca for lunch.[10]

In 1863, the most reported symptoms and diseases were anemia, chronic dysentery, headache, abdominal pain, lower limb edema, intermittent fever, chest pain and dyspnoea. In that year, almost all the prescriptions were of chicken broth, with the recommendation of wine for patients with fever without a serious condition. In addition to these diseases, the occurrence of an abortion was identified in the notebook. The reports demonstrate that the passenger had severe head and lower back pain, being given chicken broth - a preparation commonly recommended for pregnant women and puerperal women.[11]

The information found in the notebooks is in line with the group of diseases reported in the work of Rodrigues,[13] who dedicated his research to the eating practices of patients at the Hospital Real in Mozambique (belonging to Portugal) in the early 19th century. Common diseases include fevers, dysentery, gastric embarrassment, edema and ulcers. As with ships, intermittent fevers were the most frequent in Mozambique. The most common preparations offered at the hospital consisted of soup or broth in the morning, and chicken broth with bread or fish for dinner. The diet also included rice, wine, vegetables, among others.

In the work that Lopes[14] developed on feeding the sick in the hospital in the early 19th century, there is also an emphasis on beef and chicken broth. In this way, it is possible to verify that the dietary prescriptions of the referred hospitals were similar to those found in the visiting books of the wards on board.

The consumption of chicken broth has long been an exclusive recommendation for the treatment of patients. Soares (p. 34)[15] describes that "the broken chicken stock (as it was initially called) portrays an ancient culinary tradition in Portugal, even before the Portuguese arrived in India and got to know the canje" (soup). Its recognition in medical treaties as one of the most advisable meats for any physical condition has made it a protagonist in the preparation of a dish for therapeutic purposes (p. 34).

The prescription of citrus lemonade, tapioca and wine was also of great benefit to the diet of the sick.[10] Lemonade was seen as an invigorating to the spirits, but it was recommended that it be consumed in small amounts, since its excess could cause strong gastric discomforts. Tapioca was widely used during illnesses because it is considered a light and nutritious preparation, however, it was contraindicated in cases of diabetes, when it was advisable to avoid consuming starchy foods.[6]

The therapeutic qualities of wine made it fall into two distinct categories: "medicinal food" and medicine. It was included in the first one due to its repairing properties. The second assignment was justified by its high stimulating potential. Of all the fermented liquids, it was considered the most useful to members of the Navy. The explanation was that the excitement produced by the wines prevented individuals from suffering from organic weakness and weakness in hot climates. In very cold regions, the stimuli caused by drinking increased the "heat" (greater heat production) of the body, allowing patients to be more resistant to low temperatures.[16]

FINAL CONSIDERATIONS

With the development of chemistry in the 19th century, knowledge regarding the composition of food and the digestive process (assimilation and desassimilation) began to determine which would be the most appropriate for consumption. In this way, the doctors of the Portuguese Navy established the content of the rations (daily food portion) of healthy and sick sailors according to the scientific principles of modern medicine.

In this sense, the "fibrinous or animal diet" was the most recommended for patients in the wards on board. As seen throughout this work, it was considered by surgeons to be the richest in nitrogen (nitrogen), an element that became known for promoting tissue repair and the growth of organic matter. It was found that this substance, by raising body mass gain, restored the strength of patients.

The importance of carbon among medical prescriptions could be identified from the assumptions of the abstinence diet, in which respiratory foods would be preferred, since the formation of heat should be superior to the growth of organic matter. Thus, the need for energy for tissue degradation exceeded the amount of energy provided by food intake, which made this diet the most suitable for cases of obesity.

Given the above, it can be considered that many of the theories regarding the function of food for human health have changed due to scientific evolution. Thus, the sources used for the construction of this study showed that the notions of synthesis and degradation of biomolecules (assimilation and desassimilation), energy expenditure (heat production), nutritional therapy (enteral and parenteral) and breastfeeding were inherited by the knowledge built during the 19th century.

ACKNOWLEDGMENTS

To the Coordenação de Aperfeiçoamento Pessoal de Nível Superior (CAPES) - Coordination for the Improvement of Higher Education; to the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) - National Council for Scientific and Technological Development; to the Instituto de Ciências Sociais (ICS-Lisboa) - Institute of Social Sciences; to the Pró-Reitoria de Pesquisa e Pós-Graduação (PRPPG) - Dean of Research and Graduate Studies; to the Arquivo Histórico da Marinha Portuguesa - Historical Archive of the Portuguese Navy- and Universidade Federal dos Vales do Jequitinhonha e Mucuri.

REFERENCES

1. Santos KMO. O desenvolvimento histórico da ciência da nutrição em relação ao de outras ciências. São Paulo: Centro de Lógica, Epistemologia e História da Ciência; 1989.

2. Lemos, AM. Noções elementares de anatomia, physiologia humana, hygiene e primeiros socorros a prestar nos accidentes mais vulgares. Lisboa: Ferreira & Oliveira Livreiros; 1905.

3. Couto LMS. Alimentação no Brasil Imperial. São Paulo: Educ; 2015.

4. Murta NMG. O acaso dos casos: estudos sobre alimentação-nutrição, cultura e história. (Tese). São Paulo: Pontifica Universidade Católica de São Paulo; 2013.

5. Franco FM. Elementos de higyene ou dictames theoreticos, e práticos para conservar a saude, e prolongar a vida. Lisboa: Natypografia da Academia; 1814.

6. Fonssagrives JB. Tratado de hygiene naval ou da influencia das condições physicas e moraes em que está o homem do mar. Lisboa: Imprensa Nacional; 1862.

7. Fonssagrives JB. Higiene alimentícia de los enfermos, de los convalescientes, de los valetudinários: ó el régimen considerado como médio terapêutico. Madri: Imprensa Española; 1865.

8. Ferreira AM. Alimentação como meio therapeutico. (Dissertação). Porto: Eschola Medico-Cirurgica; 1870.

9. Esteves A. Estar enfermo e ser pobre: assistência à saúde no Alto Minho de oitocentos. Cic. de vid, inst e est fam de sob. 2005:668-669.

10. Maia, José Antônio. Caderno de Visita da Corveta D. Esphania. Arquivo Histórico da Marinha Portuguesa. Lisboa. Comedorias, Gêneros e Rações. Caixa 112, pasta anos 1854 a 1869. (Arquivo Geral da Marinha); maio-jun. 1859.

11. Dias, José Maria de Mello. Caderno de Visita da Enfermaria da Barca Martinho de Mello. Arquivo Histórico da Marinha Portuguesa. Lisboa. Comedorias, Gêneros e Rações. Caixa 112, pasta anos 1854 a 1869. (Arquivo Geral da Marinha); jun-set. 1863.

12. Maia JA. Estudos sobre hygiene, administração e legislação naval. Lisboa: Tipographia Universal; 1859.

13. Rodrigues E. Discurso Médico e práticas alimentares no Hospital Real de Moçambique no início do século XIX. Hist, Cien e Saude. 2014;21(2):609-627. https://doi.org/10.1590/S0104-59702014000200009.

14. Lopes MA, Os hospitais de Coimbra e a alimentação dos seus enfermos e funcionários (meados do séc. XVIII – meados do séc. XIX). Hist da saúde e das doen. 2012:147-164.

15. Soares C, Macedo, IC. Representações sociais, histórica e cultural da canja de galinha: estudo de fontes históricas e fontesorais de uma população de idosos. Demetra. 2016;11(1):27-46. https://doi.org/10.12957/demetra.2016.16717.

16. Silva JX. Breve tratado de hygiene militar e naval. Lisboa: Natypografia da Academia R. das Sciencias; 1819.

Contributors

Leão LP worked in the conception and design, analysis and interpretation of data and writing; Murta NMG worked in the conception and design, analysis and interpretation of data, writing, revision and approval of the final version of the study.

Conflict of Interest: The authors declare that there is no conflict of interest.

Received: November 9, 2020
Accepted: November 28, 2020