

## Professional Competencies and Performance of Dietitians in Food Services: An Integrative Literature Review

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### Abstract

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The performance of dietitians in food services requires professional competences for an effective practice in a complex and dynamic context. The aim of this paper was to conduct an integrative review to identify which are the competences of dietitians working in the area of Dietetics/Nutrition in food services. It is an integrative review where the following electronic databases were consulted: PubMed, Science Direct, CINAHL, Scopus, Web of Science, *Biblioteca Virtual em Saúde- BV*, Scientific Electronic Library On-Line (SCIELO) and Google Scholar, in addition to grey literature. The following criteria of inclusion were used: articles published between 2008 and 2018, with abstracts available in the Portuguese, English and Spanish language. Intersections of the sets of words dietitian/nutritionist, food service, professional competence and their variations were used. The initial search included 1,634 articles, of which 279 were eligible for full reading, and 09 articles were included in the integrative review. The dimensions comprising the professional competences of dietitians are intrinsically linked in the daily practice, and the interdisciplinarity of food services and business administration requires specific managerial skills. The gaps of core competences that are necessary today in the workforce of food services indicate the need for further investigations.

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**Keywords:** Foodservice; Restoration; Professional Competence; Dietitians; Nutritionist.

### 1. Introduction

In the field of Dietetics/Nutrition Science, the segment that comprises the production of meals constitutes a consolidated area of activity of dietitians. International data show that 93% of the countries employ dietitians in the food service and hospitality sector. [1] In the Brazilian scenario, the meals production industry employs more than 50% of dietitians. [2] Furthermore, dietetics in food service or catering is an area of activity that has vital importance from the point of view of nutrition health promotion and disease prevention. [3] Thus, food services are no exception to the definition of been considered a social space whose *raison d'être* is the responsibility for the customers' health regarding nutrition and hygiene and sanitation aspects. However, organizations always seek professionals with much more competences than those considered "traditional" in health care. [4] In this context, depending on the field of knowledge, the word competence has a different value. In the concept proposed by Fleury & Fleury, [5] competence is a set of knowledge, skills and attitudes that lead to high professional performance, improving the ability to deal with complex demands.

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In addition, in the health area, competence is viewed as the combination of knowledge and expertise that result from combined individual competences for mobilization, integration and transfer of knowledge, resources and skills, increasing the organizational performance and adding social value to the individual, in line with the strategic organizational goals. [6] Education and training programs of dietitians seem not to meet the current needs of the profession, particularly in the field of food service. Although there have been advances in research on competences, it is noticeable that in Brazil [7,8,9] and also internationally, [10,11,12] studies have primarily focused on other areas of dietitian's practices.

The mostly clinical and epidemiological approach of the studies, poor encouragement to academic production and researcher education are limiting factors to the advancement of the scientific debate on the field of food service. [1,2] Although the dietitian profession has a short course in temporal terms, there is a great diversification of the activities of this professional, unfolding a wide range of specializations. Furthermore, dietitians play a key part in the organizational structure of food services, which enables to characterize the professional competences in this segment, contributing to reflections and insights about the development of their activities and the formulation of strategies to develop the professional skills to achieve excellence in their professional practice. In short, the scarcity of scientific research and the need for more reflections on the professional competences that dietitians must have to perform their work in nutrition in food services, corroborates the need for further investigations in order to elucidate and existing gaps. The topic of professional competences is under constant discussion, which makes the present study relevant. Given the above and seeking to provide elements to strengthen the competences in the area of study, the present investigation has the aim of conducting an integrative review of literature to identify which are the competences of dietitians to effectively perform their work in the area of nutrition/dietetics in food services, from the perspective of the concept proposed by Fleury & Fleury. [5]

## 2. Materials and Methods

It is an integrative review of literature, which is a research method that requires strict analysis of data and allows synthesizing results of studies using different methodologies. [13] The study was conducted in six steps and in a systematic way, namely: identification of the topic and formulation of the research question; definition of criteria for inclusion and exclusion of the studies to be selected; search of primary studies in the literature; definition of the information to be extracted from the selected studies/ studies categorization; analysis and interpretation of results and presentation of the review/synthesis of knowledge. [13]

### 2.1 Search strategy

The studies identification and selection were made in a systematic way, according to the protocol developed for literature review, and was carried out between June and October 2018. As search strategy, the following electronic databases were accessed: PubMed (National Library of Medicine National Institutes of Health), ScienceDirect, Scopus, Web of Science, *Biblioteca Virtual em Saúde* (BVS, Ministry of Health, Brazil), Cumulative Index to Nursing & Allied Health Literature (CINAHL), Scientific Electronic Library Online Brazil (SciELO), in addition to an electronic search engine (Google Scholar). The list of references in the selected articles was also examined in order to identify relevant articles. Three sets of intersection of literature search terms were used based on the list of *Descritores em Ciências da Saúde (DECS)* (Health Sciences Descriptors) and the Medical Subject Headings (MESH), and their combinations were adapted for each database, included: *nutritionists, dieticians, dietitians, mental competency, competency, competence, professional competence, generalization of expertise, technical expertise, food service, catering, restoration, alimentación colectiva.*

### 2.2 Inclusion and exclusion criteria

The search included studies published in the period between January 2008 and October 2018, written in the Portuguese, English or Spanish idioms, with abstracts available in the selected databases and which addressed the competences of dietitians and/or their activities in the area of nutrition in food service. Only articles available in full text were selected. Review studies, essays, reports, commentaries, editorials, communication, reports on experience, opinion, consensus, tools and practical guides were excluded, as well as studies with a focus on college education and training and those dealing with professional competences in areas of dietetics/nutrition other than food service.

### 2.3 Selection of studies

The extraction of data from the studies preliminarily identified was initially done by reading the title and abstract of the articles and, in case of doubts regarding the inclusion of the article in the integrative review, an

independent researcher was consulted. At this point, the studies with content that did not fit the adopted criteria were excluded. In case of papers without an abstract or causing uncertainty after the initial reading, the complete article was consulted to confirm its eligibility. Then, the selected articles were read in full and carefully analysed and, additionally, seminal relevant articles cited in the references of the selected studies (manual search) and which met the inclusion criteria of this review were included.

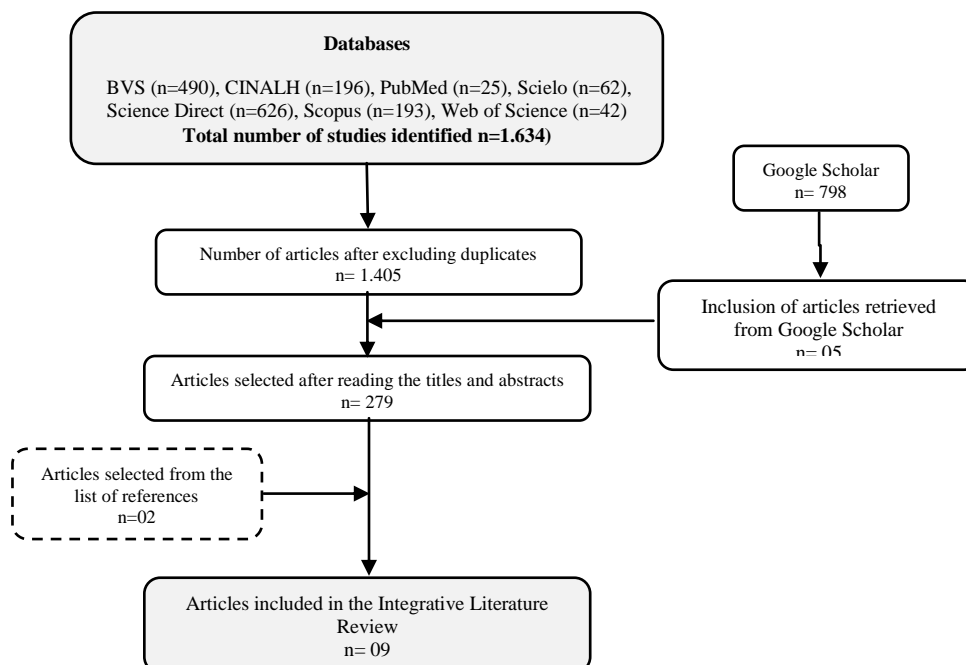
## 2.4 Data analysis and synthesis

The selected studies were analysed with the support of *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ), (version 0.7 Alpha 2 e R version 3.2.3), a free software anchored in the R software and which enables processing and analyses of textual data. [14] In the present study, we determined the categories of analysis (*posteriori* variables) that emerged from the data that were in line with the concept of competence proposed by Fleury & Fleury, [5] who consider competence as a responsible, accountable and recognized action/behaviour that includes mobilizing, integrating and transferring knowledge, resources and skills and which add economic value to the organisation and social value to the individual. Based on a careful reading of the articles, segments were extracted from the text and information concerned with the objectives of the study was garnered, creating a *corpus* of research from which the exploration stage took place. The *corpus* text was built in the English language in order to ensure uniformity (there were articles in Portuguese and English). An open codification was performed with simultaneous use of axial codification, which improves and differentiates the categories resulting from the open codification, associating them to their characteristics and dimensions, from which we selected those that seemed more promising to reveal the objects of this study, and then we defined the smallest unit, element of the material, that could be analysed. [15] In this stage we adopted the criteria of mutual exclusion and homogeneity. For data processing, the technological support of the words cloud was used as a strategy of appropriation of eminent content. Thus, the words were grouped and arranged graphically according to their frequency, allowing their identification. [16] Based on the most frequent words found in the text excerpts, a lexical analysis was performed.

## 3. Results

A total of 1,634 were initially identified on the seven databases accessed, from which 279 were chosen for the full review of titles and abstracts. Of these, nine final articles were selected for a more in-depth analysis, as described in the process flowchart of articles selection (Fig 1).

**Fig 1. Flowchart of search and selection of studies. Brazil, 2018**



### Characteristics of the included studies

The studies that were selected for the final sample are described in Table 1. The studies predominantly had a qualitative approach (n=08), [17-20, 22-25] and only one study had a mixed approach. [21] The studies were conducted in four countries, the majority in Brazil (n=4), [17-19, 22] followed by Australia (n=2), [20,23] Taiwan (n=2) [24,25] and the United States of America (n=1). [21] Regarding the idiom, the selected studies were written in English (n=7) and Portuguese (n=2).

**Table 1. Distribution of articles by author, year, country, periodicals, and objectives of study (2008-2018). Brazil, 2018.**

Author/ year	Country	Periodicals	Objectives
Benetti et al. (2014) [17]	Brazil	Interdisciplinary studies on ageing	To know the profile of the Dietetics/Nutrition professionals working in Long-Term Care Institutions for the Elderly and identify the challenges and perspectives pointed out by them in the institutionalization context.
Cardoso et al. (2018) [18]	Brazil	DEMETERA: Food, Nutrition & Health	To investigate how reflexive practice can influence the organizational learning in food services.
Alvarez et al. (2008) [19]	Brazil	Produto & Produção	To explore the logic aspects of the services industry and its relation with competences management.
Farrer et al. (2018) [20]	Australia	Australasian Journal on Ageing	To explore how dietitians can work with cooks and chefs and contribute to the best practices.
Gaba et al. (2016) [21]	United States of America	Global Journal of Health	To identify the required nutrition and dietetic needs, skills and expertise as described in job announcements in New York metropolitan area.
Kraemer & Aguiar (2009) [22]	Brazil	Revista de Nutrição	To identify qualification and competence of workers of the food service sector.
Plint et al. (2016) [23]	Australia	Nutrition & Dietetics	To explore the career pathway and practical experiences of dietitians in the first ten years of work in order to identify factors that may influence the workforce development.
Wang (2012) [24]	Taiwan	Actual Problems of Economics	To propose an assessment tool to determine the core competences of dietitians hired by the committees of school feeding services.
Wen-Hwa Ko (2017) [25]	Taiwan	Management and Organizational Studies	To set competence indicators of food safety and sanitation that must be attained by managers and employees.

Source: research data, 2018.

It should be noted that three journals are not specific of the health care area but address the researched topic, thus answering the research question. With respect to the scenarios of practice in which they were conducted, studies were found on the most varied fields of practice of food service, such as in Long-Term Care Institutions for the Elderly; [17,20] Industries; [22,25] Schools [18,24] and Hotels. [19]

### Lexical analysis – words cloud method

According to the adopted theoretical approach, in the analyzed textual *corpus*, the words cloud was identified, which was used as a strategy for identification of eminent content, allowing identification of relevant emerging variables (Fig 2).

Fig 2. Word cloud



Source: Research data (obtained with the support of IRAMUTEQ), 2018.

By analyzing the word cloud, which gathers and distributes words graphically according to their frequency (Fig 2), it can be seen that the words are arranged randomly so that those with higher frequency appear in a larger size, indicating its relevance in the research analysis *corpus*. Furthermore, the occurrence of words that extrapolate the universe of keywords used in the descriptors for health indicate the managerial and technical role performed by dietitians as part of their professional competences. Thus, words that are directly related to the concept of competence such as “skill” and “knowledge” are highlighted. In addition, the word “management” assumes meanings related to skills and competences that are typical of the managerial activities practiced by dietitians, especially financial management, [18,21]time management, [23] sanitation management [24,25] and people management. [18,22]

#### Competences required for dietitians working in food service

According to the premise adopted in this review, professional competences constitute seven knowledge dimensions: knowing how to act, knowing how to mobilize, knowing how to communicate, knowing how to learn, knowing how to commit, knowing how to take responsibilities and having a strategic vision. [5]Based on the data presented in each study, the relevant aspects with regard to the necessary professional competences of dietitians working in food services, are summarized in Table 2. The competences were grouped into dimensions according to the required knowledge based on Fleury & Fleury’s concept. [5]

<b>Table 2. Distribution of the variables that make up the professional competence of dietitians working in collective food service, according to knowledge dimensions.</b>	
<b>Knowledge dimensions according to Fleury &amp; Fleury [5]</b>	<b>Competences/Authors</b>
<b>Knowing how to act</b> <i>Knowing what and why to do something, assess, choose and decide</i>	Decision-making [17-20, 22-24, 25] Continuous improvement/development of processes [18-25] Sanitation management [24]
<b>Knowing how to mobilize resources/capabilities</b> <i>Creating synergy and knowing how to mobilize resources, capabilities and competences</i>	Leadership in dietetics/ nutrition [22,25] Financial management [18, 19, 21, 24] Managerial skills [20, 21, 24, 25]
<b>Knowing how to communicate</b> <i>Understanding, working, sharing information, knowledge</i>	Efficient communication [17, 19-21, 23-25] Professional relationship network [20,21, 23] Socializing [21] Knowledge on information systems [21]

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<b>Knowledge dimensions according to Fleury &amp; Fleury [5]</b>	<b>Competences/Authors</b>
<b>Knowing how to learn</b> <i>Knowing how to use/obtain knowledge and experience, how to evaluate/revise mental models, how to develop</i>	Ability to develop research [21, 23] Reflexive practice [18] Permanent and continuing education [21, 23, 25]
<b>Knowing how to be engaged and commit</b> <i>Knowing how to undertake, take risks, commit oneself</i>	Self-motivation [17, 23] Diligence and cooperation [23, 24] Commitment to users/customers [19, 21, 25]
<b>Knowing how to take responsibility/ accountability</b> <i>Being responsible, taking risks and being accountable for the consequences of their actions and being recognized for that.</i>	Teamwork [ 17, 19, 20, 23] Emotional intelligence [24] Professional ethics [25] Respect to hierarchies [18]
<b>Having a strategic vision</b> <i>Knowing and understanding the business of the organization, its environment, and identifying opportunities and alternatives.</i>	Value adding to the service/product [19] Quality oriented to the organizational goals [24] Analytical skills [18] Customer servicing [24]

Source: research data, 2018.

#### 4. Discussion

Dietitians play a vital role in the organizational structure of food services, their activities are of great relevance and, in a globalized market, they require the development of various professional competences, showing the interdisciplinary existing in food services, especially with regard to management/administration sciences. Such assertions are revealed by observing the terms highlighted in the words cloud. Adversities relating to foods, equipment, risks management, customer complaints, and occurrence of foodborne diseases are routine setbacks in food services. [24] Thus, knowing how to act proficiently and effectively makes dietitians efficient in making right decisions, [17-20, 22-24, 25] be engaged in continuous processes improvement and capable of implementing appropriate sanitation management of the foods produced.[18-25]The competence to make decisions, especially in anticipation of problems, refers to individuals, based on their attitudes and behaviors. In this regard, this difficult task in face of various unforeseen situations and emergencies brings to focus non-programmed decisions, since they cannot be resolved by routines and norms, which ratifies the professional need to maintain the ability to make decisions when a crisis arises. [22, 24, 25]Decisions are made according to criteria that are based on the understanding of their elements and logic, with emphasis on the cognitive dimension of the competence. Also, due to the limited human rationality in processing the necessary information to make an ideal decision to solve problems, the professional should seek the most satisfactory decisions, sufficient in view of existing possibilities. [26]The work process of dietitians is inherent to the achievement of results, which demands that professionals should keep up-to-date with the Evidence-Based Practice, which can assist them in the decision-making process in case of uncertainty. Although it is a factor inherent to efficacy, the Evidence-Based Practice is still little known in the food service industry, and it is common to use legislation, technical manuals, practical guides, information resources, among others, as sources of evidence.

Taking actions based on processes control and supervision contributes to the continuous improvement process during meals production. An effective management of the service should reconcile both financial and social aspects of the service, [18] which in turn is in line with the competence concept devised by Fleury & Fleury, [5] which consists in adding economic value to the organization and social value to the individual. However, the typical intensity of the activities carried out at these places overwhelms the necessary skills to accomplish this goal, so as not allowing them to be articulated to achieve the organizational goals. [22]To execute their activities, dietitians perform functions related to the planning, organization, direction, supervision and assessment of the services, [27] which requires specific professional competences, as well as the mobilization of a wide range of resources such as human and financial ones. [18, 19, 22] Therefore, dietitians must build up competences that go beyond the dietetics and nutrition sciences and develop the necessary management skills to perform their activities. [20, 21, 24, 25]

The area of food services is made up by numerous activities in which the human capital is transversal to all activities, making leadership one of the professionals' main competences. [22, 25] From this perspective, the mobilization of resources is articulated with elements such as commitment, responsibility, efficient management, in addition to the need for competences standardization, which must include skills, expertise and attitudes. [22]Based on the premise that there is not a single leadership style that is correct and fits any situation, situational leadership contributes to involve and engage the whole team toward the accomplishment of desired outcomes, [28] which is of key importance, to the detriment of an area permeated by an organizational model with principles limited to work routines and tasks assignment. Since the leader attitudes and the influence of the leadership style affect the work atmosphere and outcomes, dietetics professionals who are in leadership positions can assume diverse roles according to the demands of the most varied situations, which makes the recognition of competence and motivation vital, decisive in the leadership process.

Food services are part of a competitive scenario where it is invariably necessary to develop strategies to reduce costs [19, 24] and optimize the use of resources. So, it is of paramount importance that dietitians have competence to intervene and correct failures in order to ensure continuous processes improvement, effective productivity and wastes elimination. So, to have competence to work in the financial management of food services is vitally important. In a globalized market, to succeed in the process of negotiation of products and services, in creating partnerships and obtaining the collaboration of all actors involved in order to achieve the goals, makes effective communication an important tool in organisational management. Specific aspects of the communicational process such as proficiency in a second language and keeping a successful relationship network are leadership imperatives in strategic positions, such as those of directors. [21]

The workforce of food services typically has workers with low education levels and a clear hierarchical barrier, which makes it difficult to share knowledge and information. As a result, routine aspects of the meals production process, e.g., preparation of menus, may be hindered by inefficient communication. Therefore, improving competences aiming to an effective communication in its most varied forms, such as written communication, and practical, open and regular interactions between the dietitian and the staff, becomes a need. [20, 24]In a society where the relations between knowledge and education are increasingly enhanced, the organizational success is associated with information gathering and use. Such assertion can be seen in the dietitians' inclination to work in areas that offer more opportunities for research or specialization. [23]Concerning scientific research, the labour market follows rules that are different from those established in the academia. It can be seen that the significant professional presence of dietitians in food services is not reflected on the scientific research field, with timid participation in the complex production of knowledge and expertise. However, dietitians are expected to conduct and divulge research works relating to the area of dietetics and nutrition and promote technical-scientific exchange. [22] From this perspective, the demands that have arisen in the workplace do not allow that professionals keep tied to a specific technical job only.

Therefore, it should be emphasized that the lack of specialization necessary to achieve a satisfactory professional performance is still a reality in some specific contexts in the area under study. It can be inferred that aspects resulting from demotivation and devaluation commonly experienced by the professionals contribute to their lack of efforts to improve skills and qualification, thus creating a vicious cycle.As the activities of dietitians perform activities in food services, they are increasingly required to build management-related competences, which somehow lead them astray from dietetic care activities. [17] However, often when the importance and need to motivate work teams are mentioned, the dietitian remains in the background and the spotlight turns to the operational staff.The work dynamics requires collaboration and interaction among all those that make up the work team, including dietitians. Thus, the importance of team interaction is emphasized in order that trust, collaboration and motivation can be built to cope with the challenges that emerge in the meals production process. [17, 19, 20, 23]The wide range of food services, their peculiarities and activities may influence the level of engagement of this professional. So, performing a job based on ethical principles is one of the most important aspects comprising the necessary professional competences. [25] Considering the organizational scenario where a leader can influence sound ethical conduct in the workplace, the dietitians' updated ethics and conduct code gains importance in Brazil, [29] which should clearly describe their duties and rights in the performance of their professional activities. [21, 23]Dietitians must keep secret and confidential all information relating to their job and professional performance. [29] This assertion is substantially relevant when one considers culinary creations as a competitive advantage that may favour one organization over

others. Thus, by occupying a position of trust in food services, dietitians must include professional confidentiality in their ethical conduct, and it is their responsibility and accountability to help protect the intellectual property of culinary creations and they must deal with it as trade secrecy. The organizations reality fosters the need to provide services with excellence, so that dietitians must be skilful in their capacity of analysis, especially when prospecting future scenarios, using strategies that aim to ensure customers loyalty. [18, 24] In short, it is recommended that education and training courses on dietetics and nutrition should put more emphasis on this issue, considering that client-centred approaches are still incipient in the dietetic training process. To sum up, the identification and association of the variables resulting from this integrative review has kept a theoretical alignment with the dimensions of professional competences proposed by Fleury & Fleury. [5] The review indicated a number of variables that should compose the dietitian's professional competence for superior performance in food services and elucidates the desirable and necessary relationships existing in the professional knowledge, which reflects on the organizational performance and social value, ratifying the dietitians' primary goal of health promotion and disease prevention, explicit in the clients/users' satisfaction.

It should be noted that some aspects currently required by organizations are not discussed in the present study, e.g., organizational sustainability and gastronomy. These aspects may be valuable in discussions on the competences listed and deserve further investigation in order to enrich discussions about the professional competences in this activity. In general, the Dietetics/Nutrition science is one of the areas where dietitian work has a direct impact on the control of health problems, especially when dealing with collectivities. In general, it is expected that the study provides new insights and reflections on dietitian competences in the studied area, contribute to the educational process of future professionals and contribute to the dietitian expertise in food services.

## 5. Conclusion

The present study provided relevant information on the professional competences that dietetics professionals practicing in food services must have. It was observed the professional practice permeated in various scenarios of activity and marked interdisciplinarity in other areas, particularly management/administration, which requires managerial skills specific to this area. The results reveal that the dimensions comprising the dietitian's professional competences in performing their activities in the area of food services are in line with the knowledge dimensions proposed by Fleury & Fleury. [5] However, it should be noted that the dimensions indicated were separated for the purposes of analysis, but in the daily routines the mobilization of knowledge and its particularities takes place in an intimately articulated manner. It was found that there are few investigations dealing with professional competences of dietitians in the literature, with concepts that have not yet been discussed in depth and with gaps in sub-areas of food services of vital importance at the present time. This points out to the need for more studies on this topic. Although limited in scope, the investigation provides contributions to the area of health and dietetics, since it is a study dealing with a relevant topic, which brings positive repercussions to all those involved. Furthermore, the professional competences that were identified provide useful information that may contribute to the design of Dietetics/Nutrition courses and its contents and mobilize their professional practices.

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