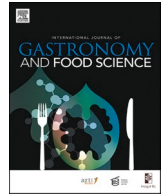




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A new trend in gastronomy: Culinary medicine chef

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ABSTRACT

The aim of this study was to determine the theoretical, practical, and conceptual framework of culinary medicine, a niche emerging trend in gastronomy. The focus group interview method, a qualitative research design, was used, and the framework was evaluated with a total of ten participants in the study. The data obtained from the focus group interview were analyzed using content analysis based on gastronomy, nutrition, and food science. After evaluation, the following three main themes emerged: Creating the conceptual framework of culinary medicine chef; practical culinary medicine training for chronic patients and their relatives, and likely contribution of gastronomy specialist to the health sector. The study revealed several formal, semantic, and technical dimensions that affect the conceptual framework of culinary medicine chef. In conclusion, this study helped determined several formal, semantic, and technical dimensions under the headings of multidisciplinary study, the contribution of gastronomy to the health sector, practical culinary training, and public health promotion, which affect the conceptual framework of culinary medicine chef.

Introduction

Gastronomy, a discipline under food and beverage management, involves developing modern and classical cooking techniques to preserve the nutritional value of food and work on better culinary culture, which combines painting, sculpture, music, philosophy, and etiquette. (Santich, 2004). The knowledge and practice of gastronomy are also employed in the field of health, especially as a tool for health professionals to develop dietary recommendations for the right food choices or food patterns for chronic patients (Perisé and Serrano Ríos, 2018).

Hopefully, the dietitians and gastronomy specialists focusing on multidisciplinary studies through nutrition and food sciences may significantly contribute to the proper maintenance of diet treatment processes at home for chronic patients. The role of dietitians in the medical team in the treatment and follow-up of chronic patients is gradually increasing (Gruia et al., 2018). For chronic patients to maintain their healthy nutritional needs throughout their lives and meet their metabolic needs, they need to be provided a diet after best culinary skills. Therefore, the application of healthy diets for chronic patients is important for meeting their energy and nutrient needs and thus protecting their health (Mauriello and Artz, 2019).

Although diet plans prepared by dietitians in hospitals reduce the duration of hospital stay for chronic patients, the lack of adequate

knowledge regarding patient diet plans at home becomes a challenge. So, more studies on gastronomy can contribute to the field of culinary medicine. Therefore, the dietitians involved in the diet treatment and follow-up of chronic patients should practice the findings and suggestions in some studies on gastronomy (Bartina, 2018).

Having an appropriate diet is one of the fundamental rights of chronic patients, and providing this diet timely can expedite their recovery as well as increase their quality of life. Schulze et al. (2018) highlighted the need to provide an appropriate diet outside the hospital as well as extend proper medical support to chronic patients at home (Schulze et al., 2018). A diet meal is a healthy and nutritious meal tailored to the health requirements of the patient; the taste and attractiveness of the food are important in adjusting the diet according to the chronic disease (Ueland et al., 2020). Often, chronic patients need to change their eating habits, so they may face difficulty in adapting to changing diets and feel dissatisfied with their meals. So, they may experience problems such as malnutrition and recurrence of diseases. Chronic patients without a diet specific to their diseases normally may not accept this change due chiefly to their dissatisfaction over the variety, quantity, and taste of the food taken before the disease. Providing culinary training by gastronomist under the leadership of dietitians to the patients for understanding and accepting change might reduce the problem (Mauriello and Artz, 2019).

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The objective of the study was to determine the theoretical, practical, and conceptual framework of culinary medicine chefs, a niche trend in gastronomy. Hence, the focus group interview method, a qualitative research design, was used in the study, and the interview data were evaluated using content analysis.

Culinary medicine and culinary medicine chef

With the “*Let food be thy medicine*” approach, Hippocrates highlighted the relationship between food and health and underlined the importance of healthy food production and gastronomy (Hoffman and Murtzluff, 2018). Today, expert doctors publish guidelines for dietary recommendations for their patients, explaining the treatment protocols as well as dietary requirements but giving no information on practical training. Culinary medicine chefs in some developed countries (e.g., the USA and the UK) prepare diet meals for chronic patients. For decades, diet cooks in the hospital diet kitchen have been preparing menus for patients without possessing any formal training on proper nutrition in case of diseases. These cooks mainly prepare patient-specific food based on dietitian’s recipes (Eisenberg et al., 2013). Due to the increasing interest shown in healthy nutrition, culinary services are offered with special menus such as gluten-free, diabetic, or salt-free foods for chronic patients, especially in hotel diet kitchens. However, chefs who do not have sufficient training work in these kitchens (Mauriello and Artz, 2019). Correcting these malpractices depends on properly evaluating the concept of culinary medicine chef as a niche gastronomy field. Due to rapid advancements in medical science and access to healthy nutrition to reduce diseases, the life expectancy of chronic patients is rising gradually. This could be accomplished by providing practical culinary training as per gastronomic practices (La Puma, 2016).

Culinary medicine chef application areas

In particular, patients with hereditary diseases (celiac, phenylketonuria, galactosemia, etc.) and/or chronic metabolic diseases (diabetes, hypertension, etc.) are diagnosed and their physicians generally provide information about their nutrition. Chronic diseases are increasing all over the world and the incidence of at least two chronic diseases in the OECD region is around 30% (OECD, 2019). On the other hand, in genetic diseases, the incidence of genetic diseases that are especially needed in nutrition varies between 1‰ and 0,01‰, and there are 700 different diseases. One of the syndromes is detected in an average of 1500–5000 live births (Bower et al., 2019). The incidence of Phenylketonuria is between 0,34‰ and 0,005‰ (Lidsky et al., 1985; OECD, 2019).

Now very little practical culinary training is given for patients and dietitians. It will take some time to provide widespread culinary training to all. Practical culinary training by expert gastronomists will improve the health outcomes of patients. For this reason, gastronomy specialists expertizing in culinary medicine and giving practical culinary training will contribute to the health sector (Larson et al., 2006, 2009).

Material and method

Data collection

In the current study, the concept of culinary medicine chef was evaluated using the focus group interview method, a qualitative research design. A focus group interview is a data collection method in which people with knowledge about the research are interviewed (Nyumba et al., 2018). Table 1 presents several focus group interview questions and overall evaluation thereof. Through the maximum variation sampling, a purposeful sampling method, focus group interview participants were selected in the current study. Patton (2014) argued that in the maximum variation sampling method, it would be advantageous to bring people from various specialties together to maximize the discovery of different ideas and suggestions. Totally, 12 dietitians and

Table 1

Some focus group interview questions and overall evaluation results.

Interview Questions	Overall Evaluation
1 Is it possible to employ gastronomy experts in the health sector? If so, how? Can you tell us your thoughts?	Dietitians are hesitant about the work of gastronomy experts in the health sector. However, they think granting a nutritional education certificate for chronic diseases can improve gastronomy. Gastronomy experts think that they have sufficient knowledge and skill sets to contribute to the health sector.
2 Is it appropriate for gastronomy experts to contribute to the preparation of diet and patient meals? If appropriate why? If not, why?	Dietitians consider it generally inappropriate, but the gastronomy experts consider it appropriate.
3 Is it necessary for patients or caregivers to receive practical culinary training before preparing meals specific to these diseases? If necessary, how can they do this? Is it possible in today’s conditions? What would you suggest for this?	Dietitians and gastronomy experts think that patients or caregivers should receive practical culinary training. Practical culinary training can be carried out in cooperation with dietitians and gastronomy experts. For this to happen, they will need to work together at an advanced level.
4 Could you describe the concept of culinary medicine chef?	Culinary medicine chefs are trained in the field of nutrition and food science and can develop disease-specific menus and prepare meals.

gastronomists were invited for the focus group interview, and a total of 10 participants (5 gastronomy specialists and 5 dietitians) accepted the interview invitation. Prior permission was obtained from the Ethics committee of Istanbul Gelişim University (2020/32-54). Also, prior informed consent from all the participants was obtained.

Data analysis method

The content analysis method was used in the study. Content analysis is a research technique based on a systematic analysis of a text and obtaining repeatable and valid results. The repeatability of the research means that the same analysis can be done at different times and conditions. If another researcher can reproduce the same results under the same conditions after an objective evaluation, research is said to be valid. The study must be reproducible for obtaining reliable results. The method should be systematic and consist of determined processes. Therefore, the content analysis was done by four different researchers (Assarroudi et al., 2018).

Results and Discussion

Conceptual framework

Four main titles and ten subtitles were determined after content analysis of the focus group interview for the concept of culinary medicine chef (Fig. 1). Thus, many factors, including formal, semantic, and technical dimensions, which affect the conceptual framework of culinary medicine chefs, were identified.

The data and content obtained from the focus group interview were analyzed based on gastronomy, nutrition, and food science, and three main themes were reached, as shown in Table 2.

Contribution of gastronomy to health sector

Content analysis of the focus group interview revealed that gastronomy specialist could work under the leadership of dietitians in the process of creating new diet recipes for special nutritional requirements and preparing dietary meals in hospital and other kitchens. Culinary medicine chefs, especially in hospital kitchens, should be

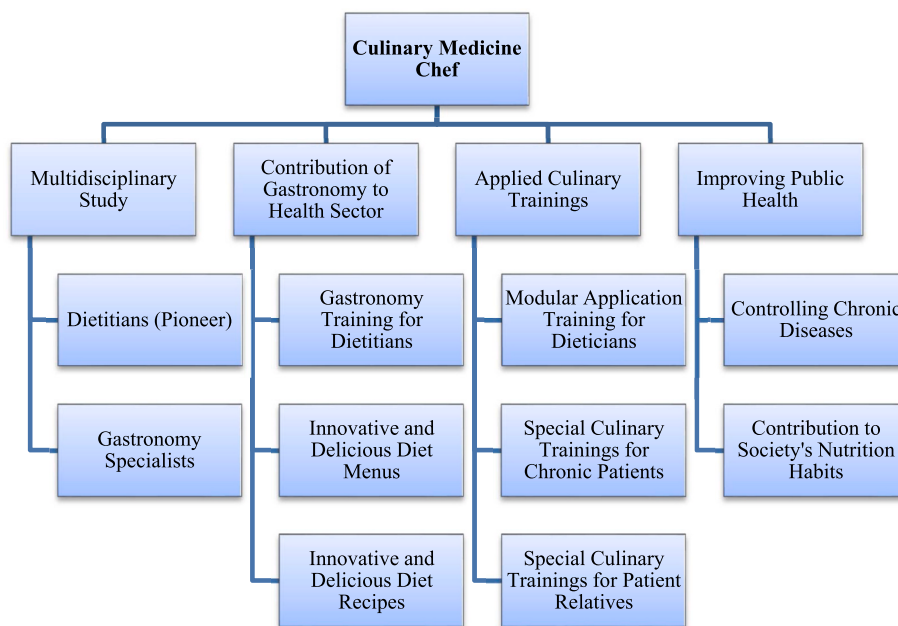


Fig. 1. Culinary medicine chef.

Table 2
Main themes of content analysis.

Main Themes	
1	The conceptual framework of culinary medicine chefs should be created under the leadership of dietitians, together with gastronomy specialists.
2	Under the leadership of dietitians, gastronomy specialists should organize practical culinary medicine training for chronic patients and their relatives.
3	Gastronomy specialists can contribute to the health sector, thereby improving the public health level.

The conceptual framework determined as a result of the content analysis of the focus group interview is detailed below.

trained to prepare meals for chronic patients (Irl B. et al., 2019).

Furthermore, the health sector needs gastronomy specialists who can contribute to making more healthy, attractive, and tasty meals for the patients. New innovative recipes, especially the meals served in hospitals, can be created. Gastronomy specialists should be actively employed in catering services in the health sector. They must participate in the menu planning and development stages with the dietician in hospital kitchens. The chefs need to perform sensory analysis and thus flavor the meals to prevent malnutrition, which is frequently encountered by in-patients (Parks and Polak, 2019).

Hospital kitchen chefs need to be gastronomy specialists with ample knowledge of the taste and presentation of the foods required for patients. Due to the lack of gastronomy specialists in culinary medicine, people at home and in hospitals prepare patient foods under the guidance of dietitians. In the focus group interview, different suggestions were made to bridge the knowledge gap of gastronomy specialists about medical cuisine. The addition of elective courses such as anatomy, physiology, and nutrition in diseases to the gastronomy curricula of universities was the most important suggestion. Other suggestions were as under:

1. Students of the gastronomy department should make a double major or minor in the department of nutrition and dietetics.
2. Organize certification programs in the field of nutrition and dietetics for gastronomy specialists.

In this way, the gastronomy specialists may achieve expertise in

preparing customized nutritious foods for patients (Spence, 2017). Gastronomy specialists can make significant contributions in the preparation of diet, especially chronic patient meals, development of new and delicious recipes, planning of the menus, and presentation of the food. Thus, new recipes can be developed and diversified for chronic patients who constantly eat the same type of foods (Gruia et al., 2018; Parks and Polak, 2019). and sometimes get bored.

Applied culinary medicine training

Today, there are diet kitchens for patients in hospitals where chronic patients are trained on theoretical culinary medicine at home before discharge, and they are offered relevant information and training about nutritious or non-nutritious patient foods. However, practical culinary medicine training required for creating menus and preparing food is not given to the relatives of patients. This problem can be overcome by designing practical medical kitchen video recordings for the patients and their relatives. However, food preparation processes in the kitchens of chronic patients can be controlled and directed by appropriate communication tools and online apps. With proper planning and more studies, it should be ensured that chronic patients and their relatives receive practical culinary medicine training. After the diagnosis by a physician, chronic patients are directed to a dietician; their nutrition programs are designed, and a procedure can be created to guide these patients by the gastronomy specialist. Considering the importance of multidisciplinary work, practical culinary medicine training programs should be planned for chronic patients and their relatives in cooperation with the Ministry of Health and hospitals, and gastronomy specialist should be assigned (Polak et al., 2016) to hospitals and other places to generate awareness about culinary medicine.

Gastronomy specialists and dietitians

In the focus group interview, dietitians showed their concerns about gastronomy specialists replacing dietitians in the health sector. They argued that gastronomy specialists should not take an active role in hospital kitchens. The dietician group preferred training on gastronomy and improved their skill sets in food preparation and cooking techniques. However, gastronomy specialists think that gastronomy and nutrition science should work in unison and develop themselves in

subjects such as anatomy, physiology, biochemistry, and healthy nutrition. Thus, gastronomy specialists would be able to work in culinary medicine (Garriga García and De Las Heras de la Hera, 2018).

The concept of culinary medicine chef

A culinary medicine chef is defined as a person who has received extensive training in the field of health of gastronomy specialists, who can prepare the meals of chronic patients and play a major role in the coordination of the preparation process. Thus, the culinary medicine chef prepares the meals of the patients under applied medical nutrition therapy according to the nutritional rules in chronic diseases. A culinary medicine chef, adequately trained in the field of nutrition and food science, can develop disease-specific menus, prepare meals with the right cooking techniques in sufficient quantity, and use appropriate materials. They can create disease-specific menus approved by the doctor and dietician, prepare and guide the preparation of meals, thereby improving life-long sustainable lifestyle for chronic patients. Thus, culinary medicine chefs are gastronomy specialists who manage the process from food supply to patient presentation in the health sector (Hauser, 2020).

Job description of a culinary medicine chef

Discussion of focus group interview specified the main job of culinary medicine chef to develop and prepare diet recipes under the leadership and guidance of dieticians and to satisfy the patients in terms of taste and appearance. They show knowledge of the nutritional patterns specific to diseases, prepare and develop recipes suitable for patients, duly following the changes in diseases, flavoring the foods that patients do not want with new recipes, and developing functional recipes. Culinary medicine chefs should conduct practical culinary training for patients and their relatives and encourage the adoption of correct cooking techniques and food safety (Sicker et al., 2020).

Applied culinary medicine training for chronic patients

One of the main outputs of the focus group interview is the arrangement of applied culinary medicine training for patients and their relatives. Patients and their relatives report experiencing serious confusion about diet programs when they are discharged with many information forms (Chae et al., 2017). Therefore, it is suggested to explain the diet required for patients and their relatives with culinary practices and multidisciplinary training must be given culinary medicine chefs can provide practical training to patients and their relatives on food preparation processes by combining the theoretical and practical knowledge they receive from dieticians with their expertise. Also, the dieticians should specialize in gastronomy so that expert gastronomy dieticians in hospitals become culinary medicine chefs (Warmin et al., 2012).

Conclusion

The current study highlighted the pivotal role played by the gastronomy specialists and dieticians. It also explained different approaches to the concept of culinary medicine chef. This study also revealed reluctance shown by the dieticians in approaching gastronomy experts and to work as a culinary medicine chef in the health sector. This problem may be resolved by dieticians and food scientists in much more collaborative work with gastronomy specialists. It is important to train culinary medicine chefs about preparing delicious, attractive, and healthy nutritional diets. Also, the incomplete training of gastronomy specialists in culinary medicine must be completed forthwith. Certificate programs in dietetics and food science should be awarded to gastronomy specialists, and training should be provided on subjects such as anatomy, physiology, biochemistry, food safety, and healthy nutrition. In this

manner, the gastronomy specialists may specialize in food preparation in chronic and metabolic diseases. However, with the combination of two disciplines, applied culinary medicine training given by culinary medicine chefs after discharge will provide a sustainable quality of life to the patients, and thus, public health will improve. In conclusion, many factors have been identified, including the formal, semantic, and technical dimensions, which affect the conceptual framework of culinary medicine chef. Besides, this study also showed similarity in the concept of culinary medicine chefs to the concept of diet kitchen chefs, though some differences were also present.

Implications for gastronomy

This study helped determined several formal, semantic, and technical dimensions under the headings of multidisciplinary study, the contribution of gastronomy to the health sector, practical culinary training, and public health promotion, which affect the conceptual framework of culinary medicine chef.

CRedit authorship contribution statement

Hayrettin Mutlu: Definition, Conceptualization, Formal analysis, Investigation, Writing – original draft. **Murat Doğan:** Methodology, Validation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that there is no conflict of interest.

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