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Qualitative evaluation of menus in a food service located in the city of Vitoria-ES

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Abstract

Objective: This study aimed to evaluate the quality of the menu in a Food Service located in the city of Vitoria-ES. *Methods*: The method of qualitative assessment of menu preparations (AQPC) was applied to evaluate preparations offered in 51 days. *Results*: In performing the menu analysis, we verified the presence of leafy vegetables and fruits in 96.08% of the days measured. The preparations served indicated monotony of color, showing 50.98% of same colors. Fatty meats were usually present in menus, such as Tuscan sausages, ham and hamburger. In 70.58% of the days assessed, the menu had more than one food rich in substances that cause flatulence. In 23.53% of the days, were applied the same cooking techniques for protein food, and cooked and fried preparations were the most common. Sweets were present in 88.23% of the days assessed, and in 50.98% of the days menus contained fried foods associated with sweets among the preparations offered. Canned vegetables were used in small amounts in preparations served as a garnish. *Conclusions*: The results of menu evaluation indicate high supply of fruits and vegetables in the food service. However, the high supply of sulfur-rich foods, fatty meats, sweets, fried foods and monotony of color indicate the need to adjust the menus to improve the nutritional and sensory preparations offered to customers.

Key words: Menu Planning. Food Services. Food Quality.

Introduction

Eating out of home has become a habit that has favored the expansion of the food services industry.[1-3] According to the Brazilian Association of Collective Meals (ABERC), the collective meals market provides 11.7 million meals/day, circulates an amount of 16.6 billion of reais per year, offers 195 thousand jobs, and accounts for yearly revenues of one billion of reais in taxes and contributions paid to the government.[4]

The meals market comprises commercial and collective food services, and the establishment that operates in the production and distribution of foods for collectivities is called in Brazil Food and Nutrition Unit (the same as Food Service) (FS). This involves several areas with the purpose of operationalizing the supply of nutrients to collectivities. FSs may be established in industrial complexes, companies or schools, under the most diverse forms of management.[5]

The objective of a FS is to produce meals according to appropriate hygiene and sanitary standards, provide nutritionally balanced meals regarding nutrients, collaborate to maintain or recover health, and help in the development of healthier eating habits.[5]

In the preparation of the menus, FSs should ensure the provision of essential nutrients for a healthy life, moderation, offering all kinds of foods, but some in low amounts, due to their composition, and proportionality, where proportion should be observed according to the groups to which individuals belong.[6]

Planning of the menus and meals served in the FS should be accomplished by a qualified nutritionist, who is responsible for programming the meals, which should meet some requirements such as the customers' eating habits, hygienic-sanitary quality, adequacy to the foods supply market, and production capacity.[6,7]

Among the methods used for menus assessment, the Qualitative Assessment of Menus Preparations (AQPC) method has been recommended.[8] This method aims to help nutritionists prepare adequate menus from the point of view of nutritional and some sensory aspects, according to scientifically prescribed health parameters.[9] AQPC is a method that allows assessing food colors, preparation techniques, food repetitions, combinations, provision of leafy greens, fruits, kind of meats and sulfur content in the foods.[7,8] Daily menus are assessed on a monthly basis, gathering weekly tabulated data in relation to the total number of days investigated.

The meals offered to customers are planned to ensure adequate nutrients distribution. Thus, periodical reviews of the menu are crucial in order to promote healthier dietary habits. In this context, the present study aimed to assess the quality of menu preparations of a FS located in Vitória-ES, Brazil.

Material and Methods

From July to September 2013, a descriptive case study was conducted in a Food Service (FS) located in Vitória, state of Espírito Santo. The FS under study serves 500 meals/day, only for lunch, five days a week.

It is an institutional FS, in which the company operates under a commodate (free concession) contract, and the meals are produced in another FS unit and transported to the serving location. The unit offers standard menu, comprised of main course and option, side dish (white or whole rice and beans), four kinds of salads, garnish, two dessert options (sweets and fruits), and juice. The serving system is mix, in which the customers themselves serve the salads, and the other preparations are served by an employee of the FS, based on a pre-defined portioning of foods served on scoop trays, in the presence of the customer.

The Qualitative Assessment of Menu Preparations (AQPC) was performed according to the method proposed by Veiros[7] and Proença,[8] and the menus offered at lunch were examined during the period of 51 days of this study. The following aspects were assessed: cooking techniques, presence of isolate deep fried foods associated with the days when sweets were offered, color of the preparations, foods used in the menu, presence of sulfur-high foods (as well as the provision of foods rich in raffinose), fruits and leafy greens, and the presence of fatty meats in days when fried foods were not offered, as well as repetitions of the main course.

To evaluate sulfur-rich preparations, foods containing sulfur and causing flatulence were considered, such as: avocado, chard, celery, onion, peanut, sweet potato, broccoli, nuts, onion, Brussels sprout, cauliflower, peas, ginger, guava, jackfruit, lentil, apple, watermelon, melon, corn, mustard, turnip, egg, radish, cabbage and grapes.[9] The menus containing two or more foods of the above list were considered with high sulfur content. Beans, which every day are present in the meals, were not considered in this evaluation.

Regarding color, the menus were considered monotonous when they offered preparations with similar colors in the same day, e.g., carrot salad, garnet yam, papaya as dessert and mango juice, except for meats and beans.

As to fatty meats, those having content of fat exceeding 50.0% of total energy value were considered[9]. In the days assessed, the provision of fruits, sweets, fried foods, leafy greens, sweets associated with fried foods, preserves, and repetition of the preparation technique of protein dishes, were considered.[7,9]

The studied food service was contacted previously, and the person responsible for the unit authorized the work. The menus were assessed based on observation of the rate of daily occurrence of foods or preparations with respect to each criterion. The number of days in the week and month in which there was the occurrence of each assessed criterion was entered into Microsoft Excel® 2010, and the percentage was calculated considering all days of the study. All data was tabulated and analyzed by the software.

Results

The results of application of the AQPC method to the menus of the FS of this study are described on Table 1.

Qualitative assessment of the menus indicated the presence of fruits and leafy greens in most of the assessed days. The FS menus are high in calorie, because there was a large number of preparations using deep-frying as cooking method, associated with fatty meats as raw material for the preparation of the main dishes and options, and sweets as dessert option.

Monotony of colors was observed, prevailing yellow and orange colors in the preparations, for example, pumpkin purée served as garnish or side dish, carrot in salads, papaya for dessert and mango juice.

It was also observed that in some of the days assessed, there was association of foods rich in sulfur with others rich in raffinose, such as chickpeas, often served as salad. The association of foods high in sulfur with those containing large amounts of raffinose may impair the digestive process.[9]

Among the most common fatty meats found in the menus are Tuscan sausage, fresh ham and hamburger. It was also observed that "stroganoff of beef and chicken meat" was frequently present in the menus, being served five times and offered 11 times in the same month, respectively. It should be noted that this preparation uses milk cream as one of its ingredients, and its use increases the caloric and lipid values of this preparation.

Regarding dessert, in most of the days studied, the FS offered fruit in the daily menu, such as a small, sweet apple, and sweets, e.g., a tablespoon of industrial milk sweet, and the users chose the dessert according to their preference. It was observed that in the assessed days the users preferred fruit for dessert.

In none of the days studied, there was the presence of canned foods served as salads. When present, such processed foods were used in small amounts, as an ingredient of side dishes or garnish. "Farofa" (toasted cassava flour mixture) (23.52%), polenta (19.60%) and pasta (13.72%) were the side dishes that presented the highest percentage of occurrence in the FS menu.

In 23.53% of the assessed days, the same cooking techniques were used for protein dishes. Among the foods preparation techniques used, preference for cooked preparations (70.58%) and fried foods (50.98%) was observed.

Table 1. Assessment of the menus offered at a Food Service located in Vitória-ES, 2013.

Month	Number of days of menu	Fruits	Leafy greens	Same colors	Rich in sulfur	Fatty meats	Fried foods	Sweets	Sweets + Fried foods
July	18	16	17	7	12	13	10	15	10
August	24	24	23	13	19	16	11	22	11
September	9	9	9	6	5	7	5	8	5
in relation of total days	51	49	49	26	36	36	26	45	26
% of occurrence	100	96.08	96.08	50.98	70.58	70.58	50.98	88.23	50.98

Discussion

Menus are the starting point for planning purchases, meeting customers' satisfaction, and managing costs in the FS. According to Ornellas,[10] good menus should present the principles of variety and harmony. By ensuring foods variety, diverse flavors, consistency, temperature, and colors are achieved. Harmony contributes to an adequate combination of colors, consistency and flavors, which requires aesthetic and artistic sense. In addition, in order to meet the FS objectives,

the nutritional adequacy of the menus should also be considered, and all this makes the nutritionist's work challenging. [11]

The high percentages of leaf vegetables and fruits found in the menu of the studied FS indicate the concern of this unit in providing food sources of vitamins, minerals and dietary fibers. It is known that the intake of these foods may help reduce the risk of non-communicable diseases.[12]

According to the World Health Organization, 400g of fruits and vegetables should be eaten on a daily basis.[13] Color variety of the foods offered in the menu is a key factor when planning the menus, because it provides a varied supply of nutrients to the FS customers. Furthermore, vibrant and contrasting colors of the foods arouse the users' interest, based on the fact that the first customer-food contact is visual. Therefore, varied, colorful preparations ensure better acceptance by consumers.[6,8] Of the days assessed, 50.98% presented color monotony in the menu, which may be associated with failures in the menu planning or changes made on the day of preparation due to lack of any required foodstuff.

It is worth noting the presence of fried foods in the FS menu on the assessed days. As this is a quick cooking method, it is often chosen in order to speed up the preparation of some foods. The low offer of preparations that use this cooking technique is considered a positive approach to promoting health, once it is well known that high intake of lipids is a risk factor for cardiovascular diseases.[14]

Another criterion that was examined using the AQPC method was the high presence of fatty meats offered on the menu. In studies conducted in institutional FSs, Ramos et al.[11] and Passos[15] found a lower percentage of fatty meats than in this study, of 52.4% and 37.5%, respectively. It should be noted that the offer of fatty meats coincided with fried preparations and sweets in 19.60% of the days assessed, which contributed to an increase of the caloric value of the menu. Menus must be planned carefully, considering other preparations when fatty meat will be offered, avoiding fatty and fried foods and sweets for dessert in the same meal.

In the studied FS, 70.58% of the days assessed, beans were associated with two or more foods rich in sulfur. High-sulfur foods may cause gastric discomfort due to high content of sulfur compounds. In addition, the association of these foods with others rich in raffinose hinders the digestive process.[9] Raffinose is an oligosaccharide found in legumes such as soybean and beans, which is not hydrolyzed by human enzymes.[7]

Canned foods were used in small amounts in garnishes and protein dishes, with the purpose of decorating or finalizing some preparations. Thus, the foodservice under study showed having control in the use of canned foods. This was considered positive, because these foods have high amounts of sodium in their composition, and there are reports of the relationship between excessive salt intake and the development of chronic diseases, such as high blood pressure and gastric câncer.[16]

The foodservice provided industrial sauces and salt sachets on the salads counter, which were consumed by the customers as they wished. This fact calls special attention because these products have large amounts of sodium. Thus, the FS might be encouraging customers to have inadequate eating habits.

The presence of sweets, fried preparations and fatty meats coincides with the dietary habits of obese individuals. Obesity may cause pathologies such as type 2 diabetes, hypertension, dyslipidemia and metabolic syndrome.[17] FSs are health-promoting establishments; therefore, they must offer nutritionally balanced preparations and meet the sensory quality required by the customers.[18]

The results obtained from the application of the AQPC method suggest the need for improvements in the menus planning, in order to diminish the provision of fatty meats, fried foods, sweets and high-sulfur foods. A balanced diet is essential to ensure health and the individual's capabilities, contributing to increased productivity and reduced risks of accidents at work.

The problems found on the menu may be related to operational difficulties, such as the lack of equipment for preparation of the meals and failures in the delivery time of foodstuffs.

Conclusions

The results of the assessment of the menus indicate a significant daily offer of fruits and vegetables in the Food Service, an aspect considered positive. However, the great number of foods rich in sulfur, fatty meats, sweets, fried foods and colors monotony indicate the need for adjustments of the menus, in order to improve the nutritional and sensory aspects of the preparations served to the customers. Suggested improvements would include a reduced offer of fatty meats, fried foods, sweets and preserves, avoidance of colors monotony, and review of cooking techniques.

Therefore, the AQPC method is a useful tool in the preparation of the menus and allows spotting failures and defining actions and solutions to be implemented in a critical review and adaptation of the menus, considering the nutritional requirements that are necessary to ensure the

individuals' health and a satisfactory provision of nutrients. In addition to AQPC, it is suggested the use of other methods of evaluation, such as customer satisfaction survey, in order to obtain important information to enable the improvement of the service provided.

Additional studies that would promote discussions on the theme are considered important.

References

1. Alves MG, Ueno M. Restaurantes self-service: segurança e qualidade sanitária dos alimentos servidos. Rev. Nutr. 2010; 23(4):573-580.
2. Ungku-Fatimah UZA, Boo HC, Sambasivan M, Salleh R. Foodservice hygiene factors - the consumer perspective. Int J Hosp Manag. 2011; 30(1):38-45.
3. Gormley FJ, Rawal N, Little CL. Choose your menu wisely: cuisine-associated food-poisoning risks in restaurants in England and Wales. Epidemiol. Infect. 2011; 140(6):1-11.
4. Associação Brasileira das Empresas de Refeições Coletivas. História, objetivos e mercado [Internet]. 2013. [acesso set. 2013]. Disponível em: http://www.aberc.com.br/conteudo.asp?IDMenu=18
5. Abreu ES, Spinelli MGN. A unidade de alimentação e nutrição. In: Abreu ES, Spinelli MGN, Zanardi AMP. Gestão de unidades de alimentação e nutrição: um modo de fazer. 3. ed. São Paulo: Metha; 2009. p. 33-40.
6. Teichmann ITM. Cardápios: técnicas e criatividade. 7. ed. Caxias do Sul: EDUCS; 2009. 151p.
7. Veiros MB. Análise das condições de trabalho do nutricionista na atuação como promotor de saúde em uma unidade de alimentação e nutrição: um estudo de caso [dissertação]. Florianópolis: Universidade Federal de Santa Catarina; 2002.
8. Veiros MB, Proença RPCP. Avaliação qualitativa das preparações do cardápio em uma unidade de alimentação e nutrição - método AQPC, 2003. Nutr. Pauta 2003; 11(1):36-42.
9. Proença RPC, Sousa AA, Veiros MB, Hering B. Qualidade nutricional e sensorial na produção de refeições. 3 ed. Florianópolis: Editora UFSC; 2008. 221 p.
10. Ornellas LH. Técnica dietética: seleção e preparo dos alimentos. 8 ed. São Paulo: Atheneu; 2006.
11. Ramos AS, Souza FFR, Fernandes GCB, Xavier SKP. Avaliação qualitativa do cardápio e pesquisa de satisfação em uma unidade de alimentação e nutrição. Alimentos e Nutrição 2013; 24(1):1-7.
12. Philippi ST. Pirâmide dos alimentos: fundamentos básicos da nutrição. Barueri, SP: Manole; 2008. 383 p.
13. Organização Mundial de Saúde. Diet, nutrition and prevention of chronic diseases. Geneva: OMS; 2003.

14. Lima FEL, Menezes TN, Tavares MP, Szarfarc SC, Fisberg RM. Ácidos graxos e doenças cardiovasculares: uma revisão. Rev. Nutr. 2000; 13(2):73-80.

15. Passos ALA. Análise do cardápio de uma unidade de alimentação e nutrição institucional em Brasília-DF segundo o método "avaliação qualitativa das preparações do cardápio [monografia]: Brasília: Universidade de Brasília; 2008.

16. World Health Organization. Forum on reducing salt intake in populations. Reducing salt intake in populations: report of a WHO forum and technical meeting; 5-7 Oct. 2006, Paris, France. Geneva: WHO; 2006.

17. Menegazzo M, Fracalossi K, Fernandes AC, Medeiros NI. Avaliação qualitativa das preparações do cardápio de centros de educação infantil. Rev. Nutr. 2011; 24(2):243-251.

18. Gelbcke G, Fernandes, AC, Carball TSL. Desenvolvimento de sobremesas diet e light e sua inclusão no cardápio de uma unidade de alimentação e nutrição. Demetra: Nutrição e Saúde 2012; 7(1):3-12.

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