

Maritime hotel company: nutritionist's operating segment in collective food service

Aline Gomes de Mello¹
Gabriella Barcellos Almeida²
Lorena Gonçalves de Oliveira³
Luciléia Granhen Tavares Colares¹
Mariana Fernandes Brito de Oliveira³

¹ Universidade Federal do Rio de Janeiro, Departamento de Nutrição e Dietética, Setor de Administração de Serviços de Alimentação, Instituto de Nutrição Josué de Castro. Rio de Janeiro-RJ, Brasil.

² Cis Brasil Ltda. Macaé-RJ, Brasil.

³ Universidade Federal do Rio de Janeiro, Núcleo Alimentação Coletiva, Curso de Nutrição. Campus Macaé, Macaé-RJ, Brasil.

Correspondence
Aline Gomes de Mello
alinemello@nutricao.ufrj.br

Abstract

This study has aimed to describe activities related to food and nutrition in the maritime hotel industry. A case study was conducted in a maritime hotel company, supported by exploratory research. To identify the activities and professionals involved in meal production processes, systematic observation and document research were carried out. Activities related to food and nutrition could occur onshore – on the support base, and offshore – on the oil platforms. Menu planning and purchasing and storage of foodstuffs, assembly and shipment of these materials to platforms would be performed onshore, while reception and storage of material, production and distribution of meals would be performed offshore. Transporting the foodstuffs to an oil platform can take up to 48 hours, depending on location and sea conditions. Therefore, controlling time and temperature would be crucial to maintain the quality of the food. In the maritime hotel company, nutritionists would develop the mandatory and complementary activities prescribed for work in the food service. Health professionals, and among them nutritionists, would be responsible for inspecting foodstuffs received on the oil platform and also for checking the sanitary quality of food for the preparation of meals. It is concluded that the production of meals is similar to other food services. However, in maritime hotel companies some steps take place onshore and others offshore. Rigorous quantitative and qualitative controls are required, since failures in controls may result in additional costs for the company.

Keywords: Food Services. Workflow. Meals. Food Storage.

Introduction

Collective eating is one of nutritionists' areas of activity according to Brazilian *Conselho Federal de Nutricionistas* (CFN; Federal Council of Nutritionists) Resolution 380/2005.¹ Activities can be performed in Food and Nutrition Units (FNU) such as: companies supplying collective food services, commercial restaurants, ship's pursers, kitchens of health care establishments, hotels, among other places.¹

The hotel industry is an expanding segment, where there is a production of goods and services aimed at lodging, food and work safety. All these activities are focused on well receiving and serving guests' different needs and the business itself.^{2,3}

Until recently, this segment referred to both onshore accommodation (onshore hotels) and nautical activities characterized by the use of vessels for the movement of passengers for merely touristic purposes. Exploration of offshore oil in Brazil has started in the 1990s⁴ with the development of another form of hospitality, the maritime one, related to meeting the needs of workers who remain on the high seas developing oil extraction activities.³ Therefore, maritime hospitality companies aim to offer lodging, entertainment, security and food to workers in oil extraction units (platforms and ships).⁵

Maritime hospitality companies have recently been a field of work for nutritionists who develop their professional activities in the area of collective eating, both in the support and logistics bases – located onshore and on the oil platforms – located offshore. Research on this segment is still scarce and, for the most part, it addresses issues related to occupational accidents⁶ and nurses' working conditions^{7,8} who, by the Brazilian government *Normas da Autoridade Marítima para Aquaviários* (NORMAM; Maritime Authority Regulations for Ship Crews) no. 13/2003⁹ are the professionals responsible, in addition to other attributions, for activities related to food and nutrition, such as: monitoring the entrance of the meals materials^a aboard and daily examining goods leaving warehouses and cold rooms for the preparation of the meals. Thus, this study aims to describe the activities related to food and nutrition in marine hospitality companies.

Materials and Methods

It was a case study carried out by systematic observation^{10,11} and documental analysis supported by field exploratory research^{12,13} conducted during the first half of 2014 in a multinational maritime

a Meal material: Foodstuffs and disposables to be used for a certain period of time in the production and distribution of meals for collectivities in maritime hotels and military FNUs.

hotel company, whose base is located in the Brazilian municipalities of Macaé, RJ and Aracaju, SE. The study was authorized by the maritime hotel company.

During the systematic observation, a script was used to identify the activities related to the meals productive process and the nutritionists' performance in this industry. The following information was collected: purchasing, reception and storage processes of materials, transport of materials to the oil platforms and the production and distribution of meals on the platforms. In addition, the company's good practice manual was consulted.

A documental analysis was carried out to identify the activities and professionals involved and the document consulted was called: "Responsibility and authority." In this stage, the following information was collected: the professionals involved in the productive process of meals, the place of operation (onshore or offshore), working day and period, nutritionists' average salaries and activities developed. To obtain information on the number of platforms served by the company, number of meals served daily on the platforms and the menu structures, the service provision contracts were consulted.

These specificities were intended to not generalize but to deepen some issues that may be studied in other maritime hospitality companies, since there is a shortage of accumulated and systematized knowledge addressing the topic.

Results and Discussion

Work environment in a maritime hotel company

The maritime hotel company, object of this study, provides outsourced services related to cleaning and organization of the whole area of the houses [housing area of the platform or ship in which leisure, eating and cabins (name given to the rooms inside the platforms) are located], control rooms, infirmary, laundry service, as well as reception and storage of materials, production and distribution of meals for 23 oil rigs (16 national and 7 international).

The maritime hotel company would carry out onshore activities on the support and logistics base located in the Brazilian city of Macaé, RJ. And offshore, in the oil extraction units (platforms) located in the Brazilian Campos Basin, located near Rio de Janeiro.

The company had a staff of 1,140 employees. Recruitment, selection and training would be carried out on the support and logistics bases. The platforms had workers occupying the positions: steward, responsible for cleaning and organizing the houses and for the laundry and governance services; receptionist; radio operator; maintenance technician; work safety technician; nutritionist;

head chef; cook; baker; kitchen assistant; salad maker; hall servant (waiter) and warehouse clerk (inventory controller). The number of workers in the offshore units depends on their size and automation but there is a limitation on the number of people aboard in order to make it possible to leave the unit in an emergency situation.^{14,15}

A peculiar prerequisite of this industry is the requirement for a basic platform safety course, called salvage – which aims to enable the non-water transportation workers to perform aboard safety procedures, and the Helicopter Underwater Escape Training course, HUET. Without such courses, workers are not entitled to boarding. Nowadays HUET is a requirement only for boarding on foreign platforms. These courses are usually funded by the professional interested in acting in the offshore segment.

The working day on the support and logistics base would be 44 hours per week from Monday to Friday, from 8 am to 6 pm, and it could also be held on weekends. All labor rights such as payment for overtime, when necessary, and weekly paid rest periods were therefore guaranteed.

The oil exploration units (platforms) would operate 24 hours a day, uninterrupted.^{14,16} And the workers would remain 14 days aboard and 14 days resting on land, with a 12-hour workday. When overtime was required, these could not exceed two hours a day, as described in Brazilian Law no. 5811 of October 11, 1972.¹⁷

The period of working days aboard and days of rest on land may vary by country. In the United Kingdom, there is an alternation of 14 days of work and 14 days of rest. In the United States, the work/rest period is 7/7 days. In Norway there is a 14/14 progression in the first cycle, 14/21 in the second cycle and 14/28 in the third cycle.¹⁸ In Brazil, the work regime of professionals working in oil exploration units is supported by Law no. 5811 of October 11, 1972.¹⁷

Given the workers' long stay in the oil exploration units, these would have some entertainment, such as: television, video, and games rooms, gym facilities, among others. In some units located offshore telephone use would be limited in time and quantity of calls per day. As for others, it would be released according to the workers' professional positions. Some platforms would also have Internet access. However, prior scheduling to use it would be necessary and access time would also be limited. All units would have kiosks for sale of toiletries, cigarettes and sweets, according to the contract signed.

Although entertainment would be made available in the oil exploration units, workers in these environments are exposed to weather-related stress factors, excessive noise, high labor demand and distancing from social and family activities.^{19,20}

The process of working in an FNU, regardless of its location, bears a similarity. In a study carried out by Colares and Freitas²¹ in a university restaurant, temporal pressure was observed

related to production and distribution of meals, inadequate working conditions and processes which potentially affect mental health due to annoyance and stress. Such working conditions can also be observed in an offshore FNU. And they may also be associated with peculiarities of the maritime hotel industry such as risks of developing biological rhythm disturbances, since the work is performed in shifts, and there are unfavorable psychosocial factors due to the high sea confinement regime and the lifestyle imposed on workers.²²

The confinement regime (which can be defined as a limitation of space and the possibility of coming and going, associated with social isolation and distancing from the family)²³ makes relaxation difficult, since there is a proximity among work, eating, leisure, rest and health care.²⁴ It can also favor the consumption of unhealthy (highly processed) foods as a form of stress relief. In this situation, it is also necessary to consider the possibility of conflicts, since there is a coexistence of professionals from different areas of activity, cultures and nationalities for a long period of time.

Nutritionists' performance in maritime hospitality

In the marine hotel company studied there were 33 nutritionists, being 90.9% females aged between 25 and 45 years. Table 1 presents information about the characterization of nutritionists' performance in maritime hotels. Regarding salaries, it is worth mentioning that the amounts increased can be differentiated according to the company's position and salary plans.

Table 1. Characterization of a nutritionist's performance in a marine hotel company. Macaé, RJ, 2014.

	Place of performance of professional activities	
	<i>Onshore</i> (Support base)	<i>Offshore</i> (Offshore oil rigs)
Number of nutritionists hired	n = 5 (15%)	n = 28 (85%)
Working day / day	8 hours	12 hours
Working time	Monday through Friday	14 days aboard
Average wage	Salary level of the professional category* plus 5% for productivity	Salary level of the professional category* plus 67.5 to 92.5% as an additional premium pay for boarding and unhealthy work and 5% for productivity
Activities developed by the nutritionists	<ul style="list-style-type: none"> • Planning the menu; • Organizing and preparing the necessary documents for the FNU operation on the platform: Best practice manual and technical data sheets; • Qualifying and carrying out technical visits to suppliers; • Selecting the food handlers and conducting training on good practices. • Controlling and organizing feed documentation for all platforms; <p>Controlling the quality of the meal to be sent to the platforms;</p>	<ul style="list-style-type: none"> • Carrying out the meal order and controlling the inventory; • Checking the container and material disembarkation report; • Controlling the quality and quantity of materials during storage; • Following up the menu preparation and the adoption of good practices during the meals productive process; • Evaluating the acceptance of menus; • Conducting customer satisfaction surveys; • Tracking billing; • Communicating to the support base non-conformities identified on the platform; • Training, supervising and evaluating their subordinates' performance.

*BRL 2,432.72 – a figure established by the Nutritionists Union of the Brazilian State of Rio de Janeiro regarding 2015.³³
Source: a document called: "Responsibility and authority."

Of the 23 platforms served, nine (39%) did not have a nutritionist because it was not provided for in the contract. However, Resolution CFN n^o. 380/2005¹ recommends at least one nutritionist per fortnight, per unit of oil exploration.

Despite the existing risks and confinement conditions experienced in the oil exploration units, motivation for aboard work is due to salary, as there may be an increase of up to 92% of the salary level predicted by the Union of Nutritionists of the State of Rio de Janeiro (SINERJ), when compared to the salaries of nutritionists who develop their activities in FNUs located onshore (Table 1).

Activities carried out by the company's nutritionists were similar to those performed in the other industries of the collective eating area and are described in Resolution CFN n^o. 380/2005.¹ And some activities considered mandatory and complementary were carried out onshore (related to service planning) and others offshore (related to organization, command and control of the meals production process), also according to Table 1. It is worth mentioning that nutritionists who performed their activities on the platforms could also perform activities not inherent to their profession, such as: control of laundry services, radiotelephony, reception and cleaning, if agreed in contract. However, regardless of the segment of action, nutritionists are health professionals and have the responsibility to contribute to promoting, preserving and recovering individuals' health, aiming at individual and collective wellbeing.¹

Description of the meals productive process in the marine hotel company studied

Meals productive processes in the oil exploration units follow an orderly flow in order to minimize the risks of contamination and have the following steps: menu planning, materials acquisition, transportation, reception, and storage, food preparation and distribution of preparations.²⁵ All this process occurs in distinct spaces, onshore and offshore.

Activities developed onshore

Food and nutrition activities carried out onshore would take place on the support and logistics base, where there would be menu planning, materials acquisition, reception, and storage, selection of meals material and other materials (such as cleaning ones) for the assembly of containers, besides transport to the port and embark on tugboats/boats to the platforms (Figure 1). The same Figure describes the eating and nutrition activities flow chart carried out by the maritime hotel company studied.

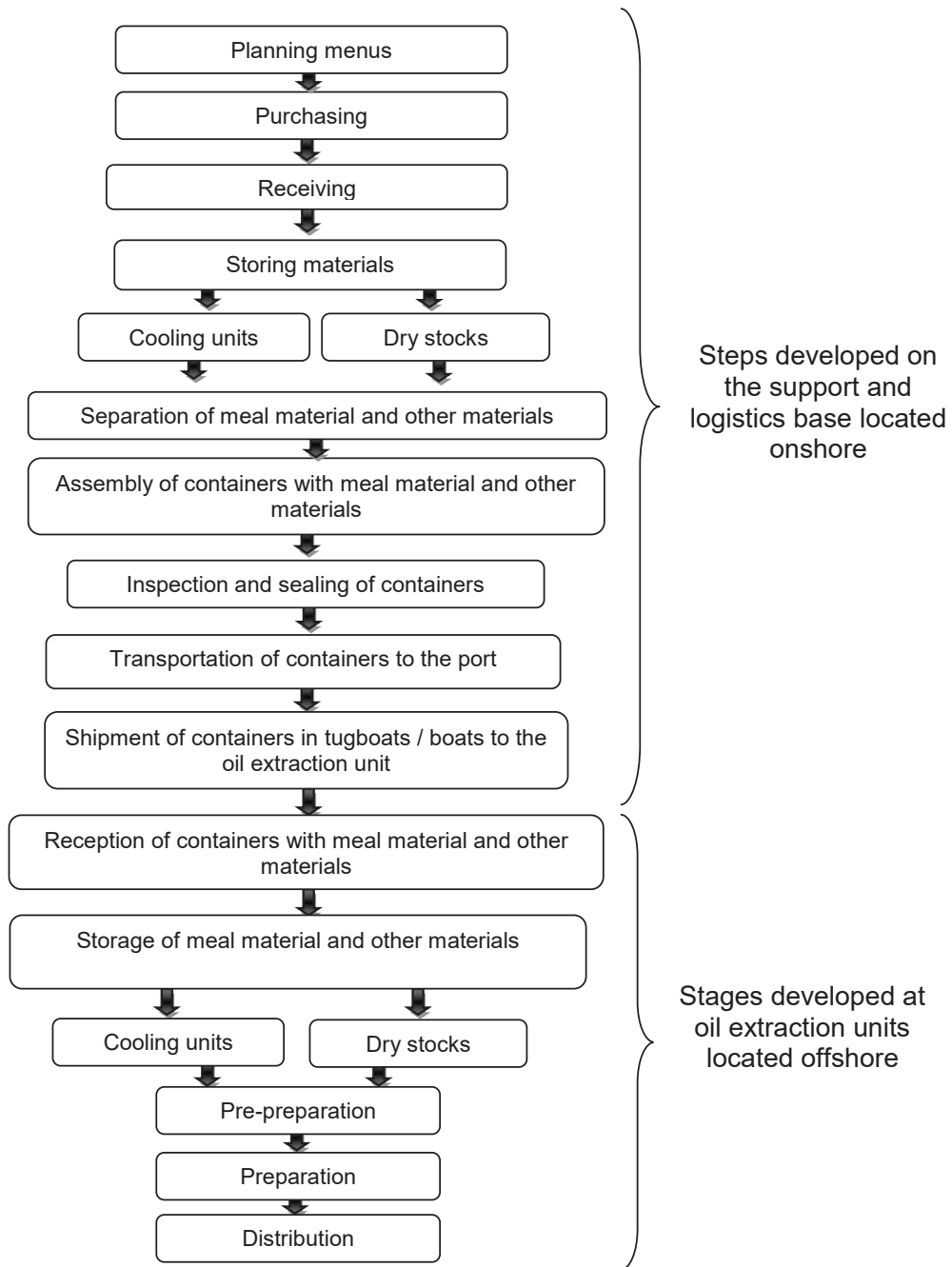


Figure 1. Flowchart of food and nutrition activities carried out by the maritime hotel company studied. Macaé, RJ, 2014.

Planning the menu would be carried out according to the contract signed between the contracting party and the maritime hotel company (contractor) and could be prepared by the planning nutritionist located onshore or by the contracting party.

In the unit studied, the menu had the following structure: four salads as an entrée (being 1 made of leaves, 2 made of mixed ingredients and 1 a more sophisticated one); side dishes (white rice, brown rice and beans); two trimmings (1 being vegetable based); two protein dishes (1 being beef); an option of a (vegetarian) protein dish; six types of dessert (4 fruits, 1 sweet and 1 diet sweet); three types of drink (1 juice or soft drink and the others, non-alcoholic carbonated ones).

The selection of suppliers would be carried out by the nutritionist with the assistance of the purchasing sector, in order to meet the quality of the goods required by the contracting party. The purchase of materials would be carried out by the purchasing sector, which would follow advice from the offshore nutritionist regarding the quantity and type of material to be acquired.

The reception of perishable and storable materials would take place in distinct, protected and clean areas, as recommended by RDC no. 216/2004²⁶ in order to minimize the risks of cross-contamination and to guarantee the quality of the final product – in this case, the meals served to the workers of the oil extraction units.

In any type of food service, quality control of foodstuffs must take place from the reception of raw materials to the consumption of the preparations²⁷ to maintain the sanitary status of the meals served. In maritime hospitality companies, this control should be even more stringent, as possible outbreaks of foodborne diseases (FBD) can cause serious disruptions to the population aboard because of their location on high seas, which makes access difficult to emergency services.

In order to ensure the quality of foodstuffs, hygiene and sanitary control measures would be taken during the reception, such as: checking the temperature of vehicles; the suppliers' delivery conditions; packaging and shelf life of the materials (food and non-food). In addition, quantitative control would be performed to avoid failures in the execution of menus in later stages. If any non-compliance were observed during reception, the supplier would be requested to replace and/or take back the material.

In order to store the materials, the maritime hotel company had five cold rooms, three of which were intended for the storage of beef and pork, one for dairy products and one for horticultural products. There were three refrigerated containers, one for the storage of ice cream and two for poultry and fish. Also, specific containers for storage of foodstuffs that did not require refrigeration, such as cleaning and disposable products.

It was found that the storage area structure of the support and logistics base of the present study was similar to that described by Ghiurghi,⁵ with equipment differentiated by type of material to be stored. This structure must be planned in order to present hygienic-sanitary design and conditions that meet the quantitative needs of the food and nutrition units located offshore and that guarantee the safety of the packaging of the meal materials. Thus, frozen food would be stored in cold storage chambers at -14 °C and the original secondary packaging (cardboard box) would be kept. And fruits and vegetables between 5-10 °C. The materials (foodstuffs, disposables and cleaning products) that should be kept at room temperature would be stored as dry stock, in accordance with the current sanitary legislation.²⁶

The separation of the meal material and other materials for the container assembly would be done from observing the material request map (meal request) prepared and sent by the platform nutritionist. At this stage, the secondary food packages would be removed, as recommended in Resolution RDC no. 72/2009,²⁵ which prohibits the storage of food in paper, cardboard and other packaging difficult to sanitize, and would be placed in monoblocks®, following a color coding. Cleaning products would be placed in brown non-cutout monoblocks. And foodstuffs in white cutout monoblocks. These would then be transferred to their respective containers (frozen, refrigerated and at room temperature).

Assembling containers would comply with the following logistics: electric containers for the transport of frozen and refrigerated foods; dry containers (without a refrigeration system) for food that could be kept at room temperature (cleaning and disposable products). Electrical and dry containers were of different color to facilitate identification in the shipment. Frozen food containers would be organized as follows: first the fish monoblocks would be placed, followed by poultry, beef and finally the ice cream. Stacking the monoblocks in the container should be done in such a way as to leave room for internal air circulation. The monoblocks would be fastened with a sturdy nylon net in order to minimize the risk of collapse during transport, lifting and receiving it on the platform. Inside the container, an equipment to measure/control the temperature would be placed, the information being stored on a chip, which allowed to observe the temperature variation during the transport of the alimentary meal materials.

At the end of the assembly, the container would be inspected by the nutritionist of the contracted company located onshore and by the contract supervisor appointed by the contracting party, and then sealed. Containers would be transported by car to the port of Brazilian city Macaé, RJ, inspected and embarked on the tugboat/boat towards the platform. The supply time and place of the vessel would be communicated at least two hours in advance to the sanitary authority, as recommended by Resolution RDC no. 72/2009.²⁵

Considering that the FNUs located on the platforms are far from the coast and that the transport of the meal material can last about 48 hours, depending on the location of the platform at high sea and the maritime conditions, controlling the containers time and temperature is determinant to maintain the quality of foodstuffs to be delivered to the oil exploration units.

Activities developed offshore

Offshore eating and nutrition activities would take place in the oil exploration units (platforms) where reception and storage of meal material and other materials, production and distribution of meals would take place (Figure 1).

When arriving at the platform, the transport temperature data of the meal material, which would be stored on the chip, would be transferred to a computer in order to generate reports and it would be possible to evaluate the temperature variation during transport. And if the data showed that the food had remained for a long time at risk temperature, the container would be immediately taken back to the support and logistics base. This procedure could generate some losses, such as the application of fines, loss of all raw materials transported, and loss of confidence in the quality of the services provided by the maritime hotel company. In addition to the above, the offshore FNU would not be supplied, which could hamper the provision of meals to workers aboard.

The meal material would follow a weekly schedule of reception and upon reaching the platform it would be inspected by the nurse and nutritionist professionals. According to the Brazilian government *Normas da Autoridade Marítima para Aquaviários* (NORMAM; Maritime Authority Regulations for Ship Crews) no. 13/2003,⁹ the nurse is responsible for evaluating the reception of the meal material aboard in order to examine its quality and check if the food presents risks that could harm the health of the workers in the oil extraction unit. According to this norm, it is also the nurses' responsibility to examine, on a daily basis, the goods that leave the warehouses (inventory) and cold stores aboard for the preparation of meals.

In the company studied, due to the presence of a nutritionist in the staff, these activities were shared by the health professionals aboard. It should be noted that, according to Resolution CFN no. 380/2005,¹ nutritionists' obligatory activities are: planning, coordinating and supervising the activities of selecting suppliers, food origination, as well as its purchase, reception and storage.

During the inspection, the following aspects were checked: container hygiene conditions, validity of materials and hygienic-sanitary aspects of foodstuffs²⁸ since the foods to be offered

should be obtained from sources approved or considered satisfactory by the competent authorities, absence of deterioration or tampering.²⁵

The first good to be inspected was meat, followed by dairy products and leafy vegetables, since the packaging and the time consuming transportation could deteriorate them, rendering them unfit for consumption. Next, those stored at room temperature would be checked. After inspection, the meal material would be immediately unloaded to be properly stored.²⁸

The nutritionist would follow the unloading process and instruct on the proper form of storage to be performed by the warehouse clerk. According to RDC no. 72/2005,²⁵ meal materials should be stored by type (where possible) and under appropriate temperatures in order to preserve the hygienic-sanitary quality.

The storage areas of the meal material must be free from objects foreign to the environment, such as unused equipment and utensils, raw material unfit for consumption, toxic or other products which may be a source of contamination for food stored therein as described in RDC no. 72/2009.²⁵ It is worth noting that this same care must be adopted in different types of food services, regardless of their location.

For the pre-preparation activities, some offshore FNUs had a meat area separated from the vegetable area and a preparation area equipped with an oven, steak plate, fryer, stove and other equipment necessary for the production of meals. In the FNUs where there was no separation of the areas by physical means, the production process stages would be carried out at different times to reduce the risk of cross-contamination. Such measures would be adopted in compliance with Resolution RDC no. 216/2004,²⁶ which recommends the separation of the different activities by physical means or other means in order to avoid cross-contamination, maintain the quality of the meals served and the consumers' health – in this case, the workers on the platforms.

In the 23 oil extraction units, the number of workers ranged from 40 to 377 and they were entitled to six meals a day (breakfast, collation, lunch, snack, dinner and supper). An average of 934 ± 527 meals per day would be served.

In the FNUs located on the platforms, breakfast would be classified as a large meal, since the preparations offered resembled those served at lunch and dinner.

Regarding snacks, depending on the size of the platform, on each floor there was a distribution point, where the offer would be: coffee, biscuits, yogurt and fruit, both in the morning (collation) and in the evening. The goods offered at the snack distribution points, as well as the quantities, would vary according to the contract signed between the contracting party and the contracted party.

The meal distribution system would be as self-service but the FNUs located on international platforms (30%) would adopt the mixed system by portioning the main course.

Regardless of the distribution system, maintaining the temperature of the preparations exposed to consumption should be adequate and complied to, thus minimizing the risk of microorganisms multiplying. In a study carried out by Alves & Ueno²⁹ evaluating the sanitary conditions of the preparations served in self-service restaurants, 15% of the samples of the hot preparations exposed to consumption had a temperature below 40 °C and 53.1% of the samples of the cold preparations had a temperature above 21 °C. The authors also reported contamination by mesophilic aerobic bacteria, positive coagulase-positive *Staphylococcus* and coliforms in the mozzarella-stuffed beef roulade and in the Brazilian *salpicão* salad, which would be exposed at 57.8 °C and 28.3 °C, respectively. The relationship between the temperatures measured and the contamination by microorganisms indicating sanitary quality reinforces that the distribution temperature of the preparations plays a relevant role in the safety of the meals served.

To ensure the quality of the meals served, time and temperature control must be carried out and recorded in a proper form to be presented to sanitary authorities whenever requested.²⁵ Preparations that are consumed hot should be kept at a temperature above 60 °C for at most six hours. And cold preparations should be kept at 5 °C in order to maintain their hygienic-sanitary quality.^{25,26}

The inadequate use of temperature during the productive process of meals, such as insufficient cooking of foods, and the preservation of meals at a temperature of risk (10 to 60 °C) are determinant factors for the survival and multiplication of microorganisms, which can result in the occurrence of outbreaks of FBD.³⁰

Although no studies have been found dealing with FBD outbreaks in FNUs located on platforms, there are reports of this syndrome in cruise ships (which also have confinement for another purpose, leisure). Rooney et al.³¹ have studied FBD outbreaks that affected cruise passengers between 1970 and 2003 and reported the presence of the following microorganisms: *Salmonella* spp., *Escherichia coli*, *Shigella* spp., *Vibrio* spp., *Staphylococcus aureus* and *Clostridium perfringens*. Passos et al.³² have reported the occurrence of gastrointestinal disturbances (vomiting, abdominal pain, headache) in cruise ship passengers.

Regarding organic food residues generated by an FNU located offshore, these would be stored in their own tank (organic trash) to be later crushed and discarded in the high seas. Recyclable solid wastes would be packed in garbage bags or buckets and the contracting company would be responsible for their final disposal.

As in tourism vessels, the food production process carried out in maritime hospitality companies needs to be carefully taken care of, since it happens in two distinct moments (onshore and offshore), which increases the risk of food contamination.

These results reinforce the need for an adequate control of the food production process carried out in the FNUs located offshore in order to prevent the growth, multiplication and dissemination of pathogenic microorganisms and to maintain the health of workers who carry out their activities in oil extraction units.

Conclusion

Although the meals productive process is similar to that conducted by several FNUs, the greater complexity observed in the maritime hotel industry is due to the activities taking place in two distinct spaces (onshore and offshore), with the need for a strict control of the quantity and quality of meal material to be used.

Quality control of meal materials should be carried out throughout the entire meals productive process. Temperature monitoring of the containers having the meal material must be rigorous, since their transportation to the platform may occur over a long period of time and failures in this process may entail additional costs, including penalties for the food service company contracted.

Nutritionists play a critical role in maintaining the quality of the meals produced and the well-being and health of the workers, who remain for a long time in a confined environment.

Although the nutritionists' work in the hotel industry has grown over the last few years, few studies have been conducted. Therefore, research on nutritionists' work in offshore food and nutrition units should be conducted in order to promote possible improvements and to give visibility to these professionals' work.

References

1. Resolução CFN N°380. Dispõe sobre a definição das áreas de atuação do nutricionista e suas atribuições, estabelece parâmetros numéricos de referência, por área de atuação, e dá outras providências. 28 dez. 2005.
2. Davies CA. Manual de hospedagem: simplificando ações na hotelaria. 3. ed. EDUCS; 2002. 233 p.
3. Mello G, Goldenstein M. Perspectivas da hotelaria no Brasil. BNDES Setorial 2011; 33:5-42. Disponível em: http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bnset/set3301.pdf.

4. Teixeira AA. A exploração e produção de petróleo no Brasil: 15 anos de abertura. Interesse nacional. Interesse Nacional [Internet] 2013; (22). Disponível em: <http://interessenacional.uol.com.br/index.php/edicoes-revista/a-exploracao-e-producao-de-petroleo-no-brasil-15-anos-de-abertura/3/>
5. Ghiurghi F. LC tem novo centro de distribuição em Macaé, RJ. Food and News [Internet] 20 out. 2014. Disponível em: <http://foodandnews.com/busca/tags%3A+mais+qualidade+qual/5957-LC+TEM+NOVO+CENTRO+DE+DISTRIBUI%3%87%3%83O+EM+MACA%3%89,+RJ>
6. Freitas CM, Souza CAV, Machado JMH, Porto MFS. Acidentes de trabalho em plataformas de petróleo da Bacia de Campos, Rio de Janeiro. Cad. Saúde Pública 2001; 17(1):117-130.
7. Guedes CCP, Aguiar BGC. Discutindo e refletindo sobre a competência do enfermeiro offshore. Rev. Enferm. UERJ 2012; 20(1):61-6.
8. Corrêa DDC, Andrade M, Coimbra L. Espaço líquido: o enfermeiro como agente do cuidado no ambiente offshore. Rev. Enferm UFPE 2013; 7(12):6907-12.
9. Marinha do Brasil. Normas da Autoridade Marítima para Aquaviários (NORMAM 13-DPC). Estabelecer normas de procedimentos relativos ao ingresso, inscrição e à carreira dos aquaviários pertencentes aos 1º, 2º, 3º, 4º, 5º e 6º Grupos e para concessão e emissão de Certidão de Serviços de Guerra. 2003.
10. Gil A. Métodos e técnicas de pesquisa social. São Paulo: Atlas; 1999.
11. Alvarez MEB. Organização, sistemas e métodos. São Paulo: McGraw Hill; 1991.
12. Triviños ANS. Introdução à pesquisa em ciências sociais. São Paulo: Atlas; 1987.
13. Minayo MCS. O desafio do conhecimento: pesquisa qualitativa em saúde. 5. ed. São Paulo: Hucitec; Rio de Janeiro: ABRASCO; 1998.
14. Pessanha RM. O trabalho offshore: inovação tecnológica, organização do trabalho e qualificação do operador de produção na Bacia de Campos, RJ [dissertação]. Rio de Janeiro: Universidade Federal do Rio de Janeiro; 1994.
15. Maia Neto L. Identificação de perigos e avaliação de riscos em uma unidade offshore de na fase de operação: estudo de caso de um FPSO [dissertação]. Niterói (RJ): Universidade Federal Fluminense; 2007.
16. Leite RMSC. O Trabalho nas plataformas marítimas de petróleo na bacia de Campos: a identidade do trabalhador offshore [tese]. Rio de Janeiro: Universidade Federal do Rio de Janeiro. Programa de Pós-Graduação em Serviço Social; 2006.
17. Brasil. Lei nº 5811, de 11 de outubro de 1972. Dispõe sobre o regime de trabalho dos empregados nas atividades de exploração, perfuração, produção e refinação de petróleo, industrialização do xisto, indústria petroquímica e transporte de petróleo e seus derivados por meio de dutos. Diário Oficial da União 11 out. 1972.

18. Freitas CM, Souza CAV, Machado JMH, Porto MFS. Acidentes de trabalho na plataforma de petróleo da Bacia de Campos do Rio de Janeiro, Brasil. *Cad. Saúde Pública* 2001; 17(1):117-130.
19. Guedes CCP, Aguiar BGC, Tonini T. Características do ambiente de trabalho do enfermeiro em plataforma de petróleo offshore. *Rev. Enferm. UERJ* 2011; 19(4):657-62.
20. Nielsen MB, Eid J, Hystad SW, Sætrevik B, Saus ER. A brief safety climate inventory for petro-maritime organizations. *Safety Science* 2013, 58:81-88.
21. Colares LGT, Freitas CM. Processo de trabalho e saúde de trabalhadores de uma unidade de alimentação e nutrição: entre a prescrição e o real do trabalho. *Cad. Saúde Pública* 2007; 23(12):3011-3020.
22. Rodrigues VF. Relações de trabalho em Unidades de Perfuração Marítima: estudo de caso com ênfase em trabalho em turnos [tese]. Alfenas, MG: Universidade José do Rosário Vellano, Programa de Pós-Graduação em Administração; 2000.
23. Castro AC, Nunes DKP. Análise crítica do gerenciamento de stress em plataformas marítimas. Anais do XXVIII Encontro Nacional de Engenharia de Produção. Rio de Janeiro; 2008.
24. Coelho LLV, Paparelli R. A experiência do trabalhador offshore: o caso de operadores de ROV. Seminário de Saúde do Trabalhador de Franca 2010.
25. Brasil. Resolução da Diretoria Colegiada N° 72/2009, de 29 dezembro de 2009. Dispõe sobre o Regulamento Técnico que visa à promoção da saúde nos portos de controle sanitário instalados em território nacional, e embarcações que por eles transitam.
26. Brasil. Resolução da Diretoria Colegiada n° 216, de 15 de setembro de 2004. Dispõe sobre Regulamento Técnico de Boas Práticas para Serviço de Alimentação.
27. Panza SGA, Silva CR. Avaliação das condições de transporte e recebimento de carne bovina resfriada, em supermercados de grande porte na cidade de Maringá, PR. *Higiene Alimentar* 2007; 21(153):46-52.
28. Amorim GH, Guedes MAS, Guedes CCP, Aguiar BGC. Enfermeiro embarcado em plataforma petrolífera: um relato de experiência offshore. *Texto & Contexto Enferm.* 2013; 22(1):257-265.
29. Alves MG, Ueno M. Restaurantes self-service: segurança e qualidade sanitária dos alimentos. *Rev. Nutr.* 2010; 23(4):573-80.
30. Silva Jr. EA. Manual de controle higiênico-sanitário em serviço de alimentação. São Paulo: Varela; 2005.
31. Rooney RM, Cramer EH, Mantha S, Nichols G, Bartram JK, Farber JM et al. A review of outbreaks of foodborne disease associated with passenger ships: evidence for risk management. *Public Health Rep.* 2004; 119:427-34.

32. Passos EC, Mello ARP, Sousa CV, Alonso ACB, Gonzalez E, Tavares M. Avaliação microbiológica da alimentação servida aos passageiros de um navio de cruzeiro na temporada 2009/2010. Detecção de *Bacillus cereus* em refeição à base de peixe. Rev. Inst. Adolfo Lutz 2010; 69(4):571-5.
33. Sindicato dos Nutricionistas do Estado do Rio de Janeiro. 2015. Acordos coletivos. [acesso em: 18 ago. 2015]. Disponível em: <http://www.sinerj.org.br/>

Received: January 7, 2015

Reviewed: February 17, 2016

Accepted: March 18, 2016

