ISBN: 978-65-83849-10-6

Aurum EDITORA

CHAPTER 3

GOOD PRACTICES IN FOOD PREPARATION FOR MEAL SERVICES: CASE STUDY IN A LONG-TERM CARE INSTITUTION IN SÃO LUÍS, MA

https://doi.org/10.63330/aurumpub.015-003

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ABSTRACT

The increase in the elderly population in today's society leads to an ever-increasing demand for institutionalization. One of the responsibilities of Long-Term Care Facilities (LTCFs) is to ensure the preparation and provision of safe meals, given the greater vulnerability of residents. The study was conducted at a Food and Nutrition Unit of an LTCF in São Luís, Maranhão, to identify the application of best practices in meal preparation. A descriptive case study was conducted, including bibliographical research and an exploratory quantitative approach. A checklist based on RDC No. 216/2004 (ANVISA) was used to assess compliance with Good Manufacturing Practices (GMP). Of the 46 items evaluated, only 75.6% were in compliance, classifying the Food and Nutrition Unit (FNU) as regular. Along with the Checklist, a report was prepared that showed the compliance conditions of the Facilities, Equipment, Furniture, and Utensils (75%); Food Handlers (71.43%); Raw Materials (100%); Food Preparation (71.4%), Food Storage (50%), and Display and Consumption of Prepared Food (83.3%). It was concluded that the LTCF studied presented a satisfactory diagnosis. However, it is suggested that the activities of the professionals responsible for the sectors be increased in order to achieve greater satisfaction, since qualified professionals promote significant improvements in the hygienic and sanitary conditions of food establishments, as well as training the entire team of food handlers in the area of good food production and handling practices.

Keywords: Long-term care facility; Food; Handling; Good practices.

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INTRODUCTION

Aging is a natural stage of the human life cycle. It is an increasingly common phenomenon, as the rise in the number of elderly individuals is evident worldwide due to the exponential increase in life expectancy (Ratuchnei et al., 2021).

In recent years, the aging process of the population has emerged as a demographic trend in both developed and developing nations. Data provided by the Brazilian Institute of Geography and Statistics (IBGE) revealed that the trend of population aging has intensified, and the number of individuals over 60 years old in Brazil already surpasses the number of children up to 9 years old (IBGE, 2020).

Aging occurs as a result of a series of bodily changes that take place over time—a normal developmental process involving numerous endogenous and exogenous factors that must be carefully considered in an integrated manner. It is also true that aging manifests differently in each individual, as it depends on natural and genetic changes as well as lifestyle (Brandão; Zat, 2015).

As soon as functional problems begin to appear, mental, cognitive, and especially physical limitations arise, and many elderly individuals start requiring special care. When families cannot provide such care for any reason, dependent elderly individuals move to Long-Term Care Facilities (LTCFs). This applies to any governmental or non-governmental organization (Brazil, 2021).

Although all people are susceptible to Foodborne Diseases, it is known that the elderly belong to a high-risk group for infections of any nature, especially microbiological, due to changes in the immune system. Based on these facts, it can be stated that proper nutrition plays a vital role in supporting the health and well-being of the elderly, and healthy eating is important at all stages of life. In this context, Karlsen et al. (2017) affirm that good practices consist of procedures adopted to ensure food quality and safety, reduce contamination risks, and guarantee the provision of adequate meals for the population. Similarly, Martins et al. (2018) and Santos et al. (2019) emphasize that adopting these practices contributes to preventing foodborne diseases, improving the nutritional quality of meals, and increasing consumer satisfaction.

With this perspective in mind, the National Health Surveillance Agency (ANVISA) published RDC No. 216/2004, which addresses the Technical Regulation of Good Practices for Food Services. In Brazil and other countries, good practices generally follow the recommendations of the Codex Alimentarius and must be formally described in a Good Practices Manual specific to each establishment (Brazil, 2004).

Considering the current scenario of long-term care institutions in São Luís, Maranhão, this study is justified by the need to ensure the quality and safety of food provided to residents of these institutions. Therefore, the research aimed to evaluate good practices in meal preparation services and verify whether well-being practices are present in the meals offered to residents.

THEORETICAL FRAMEWORK

POPULATION AGING

Population aging is a universal phenomenon that has become increasingly relevant for both developed and developing countries. This phenomenon is characterized by an increase in both the absolute number and the percentage of elderly individuals within the total population (Alves, 2019).

In the state of Maranhão, the elderly population has also grown at an annual rate of 3.1%. The share of elderly individuals in the total population rose from 9.3% (630.2 thousand) in 2012 to 12.0% (856.5 thousand) in 2022, as shown in Figure 1 (IBGE, 2022). During this period, the proportion of people aged 60 or older increased from 11.3% to 15.1% of the population. Based on these official data from the Brazilian Institute of Geography and Statistics (IBGE), it is evident that there has been a significant increase in the proportion of people aged 60 or older, indicating that Brazil's population is aging.

This demographic shift is particularly intense in Brazil, a country that until recently had a predominantly young population. This has resulted in significant changes in the age composition of the population, with a notable increase in the proportion of individuals aged 60 or older. According to Carvalho and Martins (2016), the elderly population grows every year in several countries. In Europe, it is estimated that this population will reach 207 million in 2025 and 220 million in 2050.

Discussions on population aging began on the international stage during the 1982 World Assembly on Aging, which formulated the Vienna International Plan of Action on Aging. As a signatory to the plan, Brazil began to incorporate this topic more confidently into its political agenda, both in public policies and in initiatives led by civil society. Brazilian legislation establishes in Article 230 of the 1988 Federal Constitution that the care of dependents is the responsibility of the family, society, and the State (Brazil, 2022). Given these issues, population aging has received increasing attention and concern from civil society.

To establish minimum standards for the operation of LTCFs, the Collegiate Board Resolution (RDC) No. 283 of 2005 was created, later revoked by RDC No. 502 on May 27, 2021. This RDC enshrined in legislation the guarantee of the rights of the elderly population, the obligation to prevent and reduce health risks for institutionalized elderly individuals, and the need to improve the quality of public and private services provided in LTCFs.

LONG-TERM CARE INSTITUTIONS (LTCFs)

The increase in life expectancy, along with changes in family structure, has contributed to a proportional rise in the number of elderly individuals living alone. Providing care for the elderly within

the family environment has become increasingly difficult due to smaller family sizes, geographic dispersion, and complex family dynamics (Campos, 2018).

LTCFs are facilities that provide services to elderly individuals through various care modalities and legal structures, including philanthropic institutions with a history of offering homes for the elderly. The purpose of an LTCF is to accommodate elderly individuals who require social support, have weakened family ties, and, in most cases, lack family connections. Other facilities combine service provision with health-related similarities, but essentially, LTCFs are social institutions (Alcântara; Camarano; Giacomin, 2016).

The emergence of institutions for the elderly is not a recent phenomenon. Their history dates back to ancient Greece, where gerontokomeions (from the Greek géron, gérontos, old + kómeo, meaning care) served as hospices, hospitals, asylums, shelters, or dormitories for the elderly (Araujo; Souza; Faro, 2010). In the West, the first residence for the elderly was founded by Pope Pelagius II (520–590), who renovated his own home and converted it into a hospital for the elderly. In 10th-century Great Britain, there are records of houses called asylums located near monasteries, which provided shelter for defenseless elderly individuals and were maintained through donations from the church and the community.

The term Instituição de Longa Permanência para Idosos (ILPI) was originally proposed by the Brazilian Society of Gerontology (SBGG) and accepted in 2003, defining it as an integrated care unit aimed at individuals aged 60 or older, whether dependent or independent, providing social and health services to ensure quality of life in an environment with residential characteristics similar to a home (SBGG, 2008). However, in literature and legislation, these institutions are referred to by various terms, such as ILPI, sanatorium, asylum, nursing home, rest home, clinic, and others. The English equivalent is Long-Term Care Institution, commonly translated as long-term care facilities (Scherrer Júnior, 2020). Thus, LTCFs are defined as residential institutions, governmental or non-governmental, intended for collective housing of individuals aged 60 or older, with or without family support, in conditions of freedom, dignity, and citizenship. These institutions are regulated by the Collegiate Board Resolution (RDC) No. 502 of 2021, issued by the National Health Surveillance Agency (ANVISA), which establishes minimum operating standards for these facilities, covering aspects such as human resources, physical infrastructure, hygiene, health, and food services (Brazil, 2021).

Nogueira (2022) states that LTCFs are committed to providing comprehensive care to elderly individuals who, for various reasons, cannot or do not wish to continue living alone or with their families. Thus, the institutionalization process offers the elderly comprehensive health care, thereby improving their quality of life.

GOOD FOOD PRACTICES

Food is one of the most important human activities because its acquisition, selection, and preparation involve not only biological aspects but also social and cultural dimensions. Cooking, therefore, is an ancient art that has accompanied humanity throughout history, going beyond food preparation techniques to encompass the symbolic, sensory, and cultural aspects of a group, particularly in the home context, where shared meals are constructed, providing both the pleasure of eating and food-related rituals (Nogueira, 2022). An appropriate diet for the elderly is essential to prevent common nutritional complications in this group, such as chronic diseases, malnutrition, overweight, and obesity. Foods intended for the elderly should be flavorful and preferably seasoned with natural ingredients, as taste perception tends to decline with age. In this situation, elderly individuals often consume excessive amounts of salt, which should be avoided in this age group.

It is important to note that, in addition to selecting appropriate foods, it is equally essential to follow certain precautions when purchasing, storing, and preparing them. These precautions include maintaining personal hygiene and ensuring a clean environment during meal preparation. Those responsible for handling food must exercise extreme care to avoid contamination and preserve the nutritional value of foods, keeping away microorganisms that can cause foodborne illnesses (Brazil, 2009).

Good Manufacturing Practices (GMP) are standards or practices related to the handling, storage, and transportation of inputs, raw materials, packaging, and utensils, aiming to ensure quality and compliance with food legislation, from raw material to the finished product (Nuvolari, 2019).

According to Veronezi and Caveião (2016), the implementation of GMP in food services, in addition to being a legal requirement, improves product quality, ensures food safety, reduces costs, and provides greater security and satisfaction for consumers.

Good Practices can be defined as procedures aimed at producing and marketing food that poses no health risks. Due to a lack of knowledge about sanitary legislation, food handlers often perform their activities unsatisfactorily, outside the established standards (Lima et al., 2021).

The most recent regulation is RDC No. 216, dated September 15, 2004, which addresses the “Technical Regulation of Good Practices for Food Services.” It applies to all activities involving food, such as handling, preparation, portioning, storage, distribution, transportation, display for sale, and delivery of prepared food for consumption, including cafeterias, buffets, commissaries, confectioneries, industrial kitchens, institutional kitchens, delicatessens, snack bars, bakeries, pastry shops, restaurants, rotisseries, and similar establishments (Brazil, 2004). Based on this resolution and as determined by ANVISA, Food and Nutrition Units (FNUs) must also present a Good Manufacturing Practices Manual, detailing the operations carried out by the establishment, as well as Standard Operating Procedures

(SOPs) that describe a step-by-step guide for tasks to be followed in food services (Vasques; Madrona, 2016).

METHODOLOGY

The LTCF selected for this study has the capacity to accommodate 40 individuals. Its staff includes nursing technicians, stretcher-bearers, general service assistants, laundry workers, administrative technicians, a director, and professionals in social work, nursing, psychology, physiotherapy, speech therapy, occupational therapy, and security. In the meal production area (Food and Nutrition Unit – FNU), there are 14 employees, including a nutritionist, a food technologist, cooks, kitchen assistants, and administrative staff, working on a rotating schedule.

The research was conducted in three stages: First stage: A bibliographic review was carried out through the analysis of scientific articles and current sanitary regulations established by ANVISA. Second stage: A field study was conducted using an observational approach, with data collection based on a checklist derived from RDC No. 216 of September 15, 2004 (Brazil, 2004), in accordance with RDC No. 275 of October 21, 2002 (Brazil, 2002), which served as the basis for data collection.

Additionally, a questionnaire was administered to the coordinator of the Food and Nutrition sector of the LTCF under study. The checklist covered aspects such as: buildings, facilities, and equipment; food handlers; raw materials and ingredients; food preparation; storage of prepared food; and food display.

Based on the analysis of the results obtained through the application of the checklist in the Food and Nutrition Unit, the factors were classified into three groups: Group 1 – Good: 76% to 100% compliance; Group 2 – Regular: 51% to 75% compliance; Group 3 – Poor: 0% to 50% compliance. The third stage consisted of data analysis and tabulation.

RESULTS AND DISCUSSION

In accordance with the tool used for quality control diagnosis—the checklist—and the sanitary legislation, it was possible to verify the compliance percentages of the Long-Term Care Institution under study. The institution presented an overall compliance score of 75.6%, with 24.4% of items non-compliant, and was therefore classified in Group 2, considered to be at regular sanitary risk, meaning it did not fully meet all the criteria required by RDC No. 216/2004.

According to Santos (2019), in a study on long-term care institutions, the classification was also Group 2 (Regular), with a compliance rate of 52.96%. That study analyzed 14 LTCFs, and only one achieved compliance above 75%, qualifying for Group 1 (Good), while the vast majority met less than 50% of the checklist items.

Other studies also found Food and Nutrition Units (FNUs) classified in Group 2 (Soares et al., 2018). Silveira et al. (2016) analyzed 35 articles published between 2004 and 2013, evaluating 1,326 food service units, and observed that FNUs had an average compliance rate of 55.5%, thus also classified in Group 2, which is similar to the findings of the present study.

Eight items related to the physical and structural characteristics of the institution were analyzed, such as floors, walls, ceilings, doors, windows, sanitary facilities, lighting, ventilation, water supply, among others. The compliance percentages identified were 75.61% of items in conformity and 24.4% of items non-compliant. In the external area, access is wide, direct, paved, adapted for accessibility, and clean. Inside the kitchen, the ceiling has a good finish and is light-colored, while in the dining area (refectory), signs of infiltration and mold were observed. The walls and floor are light-colored, have a smooth finish, and are easy to clean, at an appropriate height.

The waste bins are equipped with lids and operated without manual contact. The washbasins have odorless antiseptic liquid soap and non-recycled paper towels, also operated without manual contact, ensuring proper hygiene.

Eight items related to personal hygiene and food hygiene were analyzed, resulting in a compliance rate of 75% in relation to RDC No. 216/2004. During the research, the following conformities were observed: health control of food handlers; absence of lesions or illnesses; proper handwashing; use of hairnets in the food area and by visitors; and periodic training of handlers. On the other hand, non-conformities were also noted, such as the use of adornments and inappropriate uniforms, which were dark-colored and tight-fitting.

Similar observations were reported by Oliveira et al. (2014), who noted the use of adornments by handlers during food preparation, which facilitates contamination. Likewise, Oliveira et al. (2016) found the same issue in 81.2% of the establishments evaluated, in addition to handlers not wearing light-colored, exclusive uniforms for the production area.

According to RDC No. 216, personal hygiene is of utmost importance. Handlers must wear uniforms and change them daily; personal objects and clothing must be stored in designated areas; hair must be tied and covered with protective hairnets. The regulation also requires the removal of adornments during handling; failure to comply with these measures poses a risk to consumer health due to the high probability of microbiological and/or physical contamination. Furthermore, health control of handlers must be carried out and documented, and any handler showing symptoms must be removed from activities to prevent contamination of food and the work environment (Brazil, 2004).

Five items related to suppliers of raw materials, ingredients, and packaging were analyzed, and the performance in this category was 100% compliance. During the application of the checklist, it was observed that the food storage areas were clean, organized, and equipped with protective screens. It was

reported that raw materials and ingredients are acquired through bidding processes or donations. A list is prepared by a food technologist, and dry goods are purchased monthly. For perishable foods (fruits, vegetables, greens), purchases are made weekly, referred to as a "basket," to avoid food waste. Upon arrival, the food is sent to storerooms I and II, where it is removed from secondary packaging and placed on shelves, pallets, freezers, and refrigerators.

When it comes to food preparation sixteen items were analyzed, resulting in a compliance rate of 71.4%. Among the conformities, it was noted that the raw materials and foods used for meal preparation were in suitable condition for consumption. In the food preparation area, there are three stainless steel counters designated for raw foods, stationary foods, and ready-to-eat foods, arranged to prevent cross-contamination. However, during the application of the checklist, some practices were observed that do not comply with legislation, such as thawing chicken portions at room temperature on the countertop. This non-conformity was also identified in the study by Lemos et al. (2021), where meat thawing was carried out at room temperature, immersed in containers with water, and without temperature checks of the prepared food. Based on these observations, it was found that 60% of Food and Nutrition Units presented poor compliance according to legislation. The legislation recommends that thawing should be carried out under refrigeration at a temperature below 5 ± 2 °C or in a microwave oven when the food will be immediately cooked (Brazil, 2004).

Another non-conformity observed was the absence of temperature recording and monitoring during food storage and cooking. It is important to highlight that similar findings were reported by Lopes et al. (2014) and Barbosa (2018), who also noted the lack of temperature records in food production processes in Long-Term Care Institutions.

Regarding the storage of prepared foods two items were analyzed, and overall compliance was 50%. It is worth highlighting that during meal preparation, care was taken to portion the meals, that is, to prepare and place individual meal portions in separate, labeled containers. The results found in this category are consistent with the research by Silveira et al. (2016), who, in a study conducted through a literature review evaluating 35 articles and totaling 747 FNUs across all regions of Brazil, assessed sanitary conditions using a checklist and found that, among all FNUs analyzed, only 50% were in compliance with this category.

Regarding the exposure of prepared food seven items were analyzed, and a compliance rate of 83.3% was obtained. The areas presented adequate hygienic-sanitary conditions and were free of ornaments and plants in the production area.

To ensure food safety, it is necessary that the area where meals remain on display is organized and maintained under proper hygienic-sanitary conditions, as well as that the equipment functions properly and is compatible with the activities performed. It is important that the equipment is kept at controlled

temperatures, appropriately sized, and equipped with protective barriers to prevent contamination by the consumer or any other source (Silva et al., 2016).

In an interview with the nutritionist and coordinator of the Food and Nutrition Unit (FNU), it was reported that the institution provides its residents with 186 conventional meals and 40 special meals daily (for elderly individuals with dietary restrictions, such as diabetes, or those who are bedridden). These meals are distributed across various eating occasions: breakfast, morning snack, lunch, afternoon snack, and supper. Regarding the presentation of the meals offered, there is variety in the menu, which is prepared weekly by the nutritionist.

The diet of elderly individuals must be balanced and include foods that replenish nutrients lacking in the body, helping to correct nutritional deficiencies and prevent certain diseases common in this age group. The nutritionist must implement changes in eating habits through planning and management, always controlling the consumption of certain foods and complementing them with others that can meet the body's needs, providing proteins, carbohydrates, lipids, vitamins, and minerals.

The main challenges faced by the institution in implementing well-being practices for the elderly are related to bureaucracy. Being a government institution, all food procurement requires formal bidding processes, which can delay the supply of meals to the elderly. Finally, it is evident that the institution welcomes its residents and seeks the necessary resources to ensure they have a better quality of life, making the environment resemble their former home.

CONCLUSION

Long-Term Care Institutions accommodate elderly individuals and people in situations of vulnerability, who often depend exclusively on the meals provided by these institutions. Therefore, it is essential to ensure that these meals are prepared in accordance with best production practices, guaranteeing both nutritional adequacy and food safety for this population.

Through the development of this study, it was possible to confirm the objectives proposed, which were: to identify the hygienic-sanitary conditions in the Long-Term Care Institution and to verify compliance with good food practices and well-being measures in the meals offered to the elderly, as established by current legislation in the Food and Nutrition Unit analyzed.

It was possible to identify that the compliance index found reflects good hygienic-sanitary conditions, as the facility met most of the adequacy criteria required by RDC No. 216/2004, achieving a compliance rate of 75.6%, classified as regular.

To ensure the provision of safe meals from a hygienic-sanitary perspective, some aspects need improvement, such as: carrying out upgrades in buildings and installations, improving equipment, providing continuous training for food handlers, and enhancing procedures during food preparation. By

implementing these measures, the LTCF will have the possibility of increasing compliance rates and, consequently, ensuring greater safety of meals and protecting consumer health against waterborne and foodborne diseases.

Therefore, it is recommended to intensify the actions of professionals directly involved in the nutrition sector and correct the deficiencies identified in the evaluated items, so as to achieve greater consumer satisfaction and improve the hygienic-sanitary conditions of the facilities and the food produced.

REFERENCES

1. Alcântara, Alexandre de Oliveira (Org.); Camarano, Ana Amélia (Org.); Giacomin, Karla Cristina (Org.). Política Nacional do Idoso: velhas e novas questões [National Policy for the Elderly: old and new issues]. 2016.

2. Alves, José Eustáquio Diniz. Envelhecimento populacional no Brasil e no mundo [Population aging in Brazil and in the world]. Revista Longeviver, 2019.

3. Araujo, Claudia Lysia de Oliveira; Souza, Luciana Aparecida de; Faro, Ana Cristina Mancussi. Trajetória das instituições de longa permanência para idosos no Brasil [Trajectory of long-term care institutions for the elderly in Brazil]. HERE - História da Enfermagem Revista Eletrônica, v. 1, n. 2, p. 250-262, 2010.

4. Brasil. Agência Nacional de Vigilância Sanitária (ANVISA). Resolução RDC nº 283, de 26 de setembro de 2004. Diário Oficial da União, Poder Executivo, de 27 de setembro de 2005. Available at: http://sbgg.org.br/wp-content/uploads/2014/10/rdc-283-2005.pdf. Accessed on: September 20, 2023.

5. Brasil. Agência Nacional de Vigilância Sanitária (ANVISA). Entenda por que a Anvisa republicou norma sobre ILPI [Understand why Anvisa republished the rule on LTCFs]. 2021. Available at: https://www.gov.br/anvisa/pt-br/assuntos/noticias-anvisa/2021/entenda-por-que-a-anvisa-republicou-norma-sobre-ilpi. Accessed on: September 24, 2023.

6. Barbosa, B. R.; Almeida, J. M.; Barbosa, M. R.; Barbosa-Rossi, L. A. R. Avaliação da capacidade funcional dos idosos e fatores associados à incapacidade [Assessment of functional capacity of the elderly and factors associated with disability]. Revista Ciência e Saúde Coletiva, v. 19, n. 8, p. 3317-3325, 2014. Available at: https://www.scielosp.org/article/csc/2014.v19n8/3317-3325/pt/. Accessed on: September 16, 2023.

7. Brandão, V. C.; Zatt, G. B. Percepção de idosos, moradores de uma instituição de longa permanência de um município do interior do Rio Grande do Sul, sobre qualidade de vida [Perception of elderly residents of a long-term care institution in a municipality in the interior of Rio Grande do Sul about quality of life]. Aletheia, n. 46, p. 90-102, 2015. Available at: http://www.periodicos.ulbra.br/index.php/aletheia/article/view/3234. Accessed on: September 16, 2023.

8. Brasil. Resolução da Diretoria Colegiada da Agência Nacional de Vigilância Sanitária (RDC) nº 502, de 27 de maio de 2021. Dispõe sobre o funcionamento de Instituição de Longa Permanência para Idosos, de caráter residencial [Provides for the operation of Long-Term Care Institutions for the Elderly, of a residential nature]. Diário Oficial da União, May 27, 2021.

9. Campos, V. Guia Completo: Boas Práticas de Fabricação na Indústria de Alimentos [Complete Guide: Good Manufacturing Practices in the Food Industry]. 2018. Available at: https://fluxoconsultoria.poli.ufrj.br/blog/boas-praticas-de-fabricacao-na-industria-de-alimentos/. Accessed on: October 25, 2023.

10. Carvalho, M. S.; Martins, J. S. A. O cuidado paliativo a idosos institucionalizados: vivência dos ajudantes de ação direta [Palliative care for institutionalized elderly: experience of direct action assistants]. Revista Brasileira de Geriatria e Gerontologia, v. 19, n. 5, p. 745-758, 2016.

11. Karlsen, L. et al. Boas práticas na preparação de alimentos em lares de idosos e cuidados domiciliários: o que são? [Good practices in food preparation in nursing homes and home care: what are they?]. Jornal de Pesquisa sobre Envelhecimento e Saúde, v. 1, n. 1, p. 1-12, 2017.

12. IBGE (Instituto Brasileiro de Geografia e Estatística). Pesquisa Nacional de Saúde [National Health Survey]. Rio de Janeiro: IBGE, 2020. Available at: https://www.scielosp.org/article/rbepid/2021.v24suppl2/e210001/pt/. Accessed on: July 20, 2025.

13. IBGE (Instituto Brasileiro de Geografia e Estatística). Censo demográfico 2022 [Demographic Census 2022]. Brasil.

14. Lemos, L. M. dos R.; Lemos, E. E. dos R.; Silva, E. F. da; Costa, T. L.; Freitas, M. M. de M. Evaluation of good manufacturing practices in school corners. Research, Society and Development, v. 10, n. 7, p. e37210716609, 2021. DOI: 10.33448/rsd-v10i7.16609. Available at: https://rsdjournal.org/index.php/rsd/article/view/16609. Accessed on: December 10, 2023.

15. Lima, C. M. G.; Pinheiro, L. O.; Oliveira, M. L. S.; Pagnossa, J. P.; Cardozo, R. M. D. Triagem microbiológica em mãos de manipuladores de alimentos em serviços alternativos de nutrição [Microbiological screening on the hands of food handlers in alternative nutrition services]. Avanços em Ciência e Tecnologia de Alimentos - Volume 4, 2021. Ed.: Científica Digital. DOI: 10.37885/210203122. Available at: https://downloads.editoracientifica.org/articles/210203122.pdf. Accessed on: October 10, 2023.

16. Martins, M. et al. Boas práticas na manipulação de alimentos em serviços de alimentação: uma revisão sistemática da literatura [Good practices in food handling in food services: a systematic literature review]. Controle Alimentar, v. 90, p. 263-276, 2018.

17. Nogueira, Eliane Aparecida. Percepção sobre a institucionalização de idosos na visão da família [Perception of family members about the institutionalization of the elderly]. Dissertation (Master's). Universidade São Judas Tadeu, São Paulo, 2022.

18. Nuvolari, Cibelli Magalhães et al. Boas práticas de fabricação e a cadeia do frio nos supermercados de Botucatu (SP) [Good manufacturing practices and the cold chain in supermarkets in Botucatu (SP)]. Energia na Agricultura, v. 34, n. 4, p. 521-531, 2019.

19. Oliveira, A. B. A. de; Cunha, D. T. da; Stedefeldt, E.; Capalonga, R.; Tondo, E. C.; Cardoso, M. R. I. Hygiene and good practices in school meal services: organic matter on surfaces, microorganisms and health risks. Food Control, v. 40, p. 120-126, 2014.

20. Oliveira, J. M.; Carvalho, M. G. de; Oliveira, C. C. D. J. S.; Silva, C. L. P. da; Lima, R. F. Condições higiênico-sanitárias de unidades produtoras de refeições comerciais localizadas no entorno da Universidade Federal de Sergipe [Hygienic-sanitary conditions of commercial meal-producing units located around the Federal University of Sergipe]. Segurança Alimentar e Nutricional, v. 23, n. 2, p. 897-903, 2016.

21. Ratuchnei, E. S. et al. Qualidade de vida e risco de depressão em idosos institucionalizados [Quality of life and risk of depression in institutionalized elderly]. Revista de Pesquisa (Universidade Federal do Estado do Rio de Janeiro, Online), p. 982-988, 2021.

22. Santos, J. et al. Implementação de boas práticas em serviços de alimentação: uma revisão sistemática [Implementation of good practices in food services: a systematic review]. Controle Alimentar, v. 99, p. 1-11, 2019.

23. SBGG (Sociedade Brasileira de Geriatria e Gerontologia). Quedas em idosos: prevenção [Falls in the elderly: prevention]. Projeto Diretrizes – Associação Médica Brasileira e Conselho Federal de Medicina, 2008.

24. Scherrer Junior, Gerson. Qualidade de vida, presença de sinais e sintomas de depressão e nível de dependência para realização de atividades básicas de vida diária, de idosos residentes em instituições de longa permanência da cidade de São Paulo [Quality of life, presence of signs and symptoms of depression, and level of dependence for basic activities of daily living in elderly residents of long-term care institutions in the city of São Paulo]. Repositório Institucional. Universidade Federal de São Paulo, 2020. Available at: https://repositorio.unifesp.br/handle/11600/64425. Accessed on: September 20, 2023.

25. Silva, M. L. N.; Marucci, M. F. N.; Roediger, M. A. Tratado de Nutrição em Gerontologia [Treatise of Nutrition in Gerontology]. 1. ed. São Paulo: Manole, 2016.

26. Silveira, J. T.; Brasil, C. C. B.; Floriano, J. M.; Garcia, M. V. Higiene dos serviços de alimentação no Brasil: uma revisão sistemática [Food service hygiene in Brazil: a systematic review]. Saúde em Revista, v. 16, n. 42, p. 57-69, 2016.

27. Soares, D. D. S. B.; Henriques, P.; Ferreira, D. M.; Dias, P. C.; Pereira, S.; Barbosa, R. M. S. Boas práticas em unidades de alimentação e nutrição escolares de um município do estado do Rio de Janeiro [Good practices in school food and nutrition units of a municipality in the state of Rio de Janeiro]. Ciência & Saúde Coletiva, v. 23, p. 4077-4083, 2018.

28. Vasques, Crislayne Teodoro; Madrona, Grasiele Scaramal. Aplicação de checklist para avaliação da implantação das boas práticas em uma unidade de alimentação e nutrição [Application of checklist for the assessment of the implementation of good practices in a food and nutrition unit]. Higiene Alimentar, v. 30, n. 252/253, p. 54-58, 2016.

29. Veronezi, C. T.; Caveião, C. A importância da implantação das boas práticas de fabricação na indústria de alimentos [The importance of implementing good manufacturing practices in the food industry]. Revista Saúde e Desenvolvimento, v. 8, n. 4, p. 90-103, 2016.

30. Watanabe, H.; Domingues, M.; Duarte, Y. COVID-19 and homes for the aged: care or an announced death? Geriatrics, Gerontology and Aging, v. 14, n. 2, 2020.