

Knowledge and compliance of the Good Manufacturing Practices at the Simoca - Tucumán fair. 2018

Conocimiento y cumplimiento de las Buenas Prácticas de Manufactura en la feria de Simoca – Tucumán. 2018

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Abstract

Introduction: Good Manufacturing Practices (GMP) are practices and procedures, their application is mandatory for establishments that produce, handle and sell food. Compliance with them avoids Foodborne Diseases (FBD) guaranteeing health. The sale of food on public roads is a traditional practice, it represents a risk when GMPs are not applied. The objectives were to evaluate knowledge about GMP, investigate the application, and analyze the relationship between knowledge and the application of GMP. **Methods:** descriptive-correlational, cross-sectional research. The sample consisted of 20 individuals in charge of the 20 stalls at the Simoca Fair, with prior informed consent. The information was collected through a previous pilot test survey and a checklist in 2018. **Results:** People between 20 and 29 years of age, with complete primary and secondary education, predominated. Regarding the degree of knowledge about GMP, 65% presented a high degree of knowledge, while the remaining 35% a medium degree. With respect to the implementation of the GMP, it was determined that all of them do not apply. No relationship was found between the degree of knowledge and application of them, the high degree of knowledge is not reflected in compliance with the GMP. **Conclusion:** The need for training, greater controls and evaluations for the application of the GMP is evident, since they would avoid the FBD.

Keyword: food hygiene, communication, foodborne diseases, food quality.

Resumen

Introducción: las Buenas Prácticas de Manufactura (BPM) son prácticas y procedimientos, su aplicación es obligatoria para los establecimientos que elaboran, manipulan y venden alimentos. El cumplimiento de las mismas, evita las Enfermedades Transmitidas por Alimentos (ETAS) garantizando la salud. La venta de alimentos en la vía pública es una práctica tradicional, la misma representan riesgo cuando no se aplican las BPM. Los objetivos fueron evaluar el conocimiento sobre las BPM, indagar la aplicación y analizar la relación entre el conocimiento y la aplicación de las BPM. **Métodos:** estudio descriptivo-correlacional, de corte transversal. La muestra estuvo conformada por 20 individuos a cargo de los 20 puestos de la Feria de Simoca, previo consentimiento informado. La información se recogió mediante encuesta previa prueba piloto de la misma y una lista de chequeo en el año 2018. **Resultados:** predominaron las personas de entre 20 a 29 años de edad, con estudios primario y secundario completo. Respecto al grado de conocimiento sobre BPM, el 65% presentó un alto grado de conocimiento, mientras que el 35% restante un grado medio. Con respecto a la implementación de las BPM, se determinó la totalidad no aplica las mismas. No se encontró relación entre el grado de conocimiento y aplicación de las mismas, el grado de conocimiento elevado no se refleja en el cumplimiento de las BPM. **Conclusión:** se evidencia la necesidad de capacitaciones, mayores controles y evaluaciones para la aplicación de las BPM, ya que las mismas evitarían las ETAS.

Palabras clave: higiene alimentaria; comunicación; enfermedades transmitidas por alimentos; calidad alimentaria.

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Introduction

The origin of markets and fairs dates back to distant times. They require a reduced infrastructure, it has been and continues to be an important area for producers to bring their products to consumers (1). The seller of fairs and markets must not fail to comply with the sanitary requirements that allow the consumer to have access to healthy products (2).

The sale of food on public roads is a traditional practice in Latin America and the Caribbean. It is a health risk when it is carried out by people without education or skills in food handling. Bad handling practices can lead to bacterial contamination; factor that represents a risk associated with the appearance of infectious outbreaks (3).

Good Manufacturing Practices (GMP) consti-

tute a "set of principles and technical recommendations that are applied during food processing to guarantee its safety and suitability" and it is in the Codex Alimentarius where the recommendations and principles related to the same (4,5). They constitute a mandatory sanitary requirement and must be applied throughout the food chain.

The inspection is complemented with the microbiological analyzes to which the food is subjected, being an effective tool to verify compliance with the GMP (10). An important component of microbiological testing is a group of microorganisms referred to as "indicators". Indicator microorganisms are those that serve to assess that the food does not present any health risk (6-9).

The GMPs are a series of practices and procedures that are included in the Argentine Food Code (AFC) and are a key tool to achieve

the safety of the food that is handled. They are applied in food processing (1). At the national level, there are two organizations that carry out food control: SENASA (National Service of Agri-Food Health and Quality) and INAL (National Food Institute).

The provincial Health Ministries are in charge of food control (10). The regulations and the level of quality is the same throughout the national territory and is compiled in the AFC (10).

The application of GMP in manufacturing or vending premises, especially stalls, fairs and cars on public roads in underdeveloped countries, is still an issue to be analyzed (4).

Food preparation and handling are key factors in the development of Foodborne Illness (FBD). Microorganisms can get into food from the time it is produced until it is served. When they survive and multiply, they can cause illness in consumers (10).

Ensuring the sale of healthy food at fairs represents an important axis to achieve food safety and an opportunity to strengthen traditional eating habits, reduce the impact of FBD and improve public health. It is a challenge to increase sources of employment, develop small industries and promote merchant cooperatives (4).

For these reasons, the objective was to evaluate the knowledge about GMP, investigate the application and analyze the relationship between knowledge and the application of GMP.

Material and methods

This research was observational, descriptive. The population was made up of all the workers who were present at the 20 food stalls at the Simoca-Tucumán fair at the time of the investigation. The sampling carried out was intentional. The sample consisted of 20 people, one from each position who were in charge and present at the time of the investigation. Authorization was requested from the Mayor of the Municipality of Simoca. Informed consent was requested from the individuals who participated in the research. The work belongs to the thesis for the completion of the degree, so it was previously presented to the Committee of the Faculty of Health Sciences of

the Universidad del Norte Santo Tomás de Aquino.

The variables evaluated were knowledge of Good Manufacturing Practices and application of Good Manufacturing Practices. To evaluate knowledge, a survey was prepared for this purpose, taking into account the requirements of the MERCOSUR Technical Regulation. This survey was subjected to a pilot test, in a small sample with similar characteristics to the original sample.

To evaluate the application of the GMP, a checklist extracted from the 1930/95 ANMAT disposition, Inspections Guide for food manufacturers and / or distributors, was used, with which a visual inspection was performed. This guide was validated and published by the Ministry of Health of the Nation.

Results

Twenty food handlers were evaluated, of which 35% were male and 65% female. The average age was 22.3 years, with a range of 18 to 60 years.

When evaluating the degree of knowledge, it was observed that 65% had a High degree of knowledge about BPM, while the remaining 35% had a Medium degree of knowledge (table 1).

Table 1. Knowledge about GMP in Individuals in charge of the positions of the Simoca Fair

Knowledge level	Quantity
High	7
Medium	13
Low	-

The cleaning frequency of the food handling area was determined, where it was observed that 85% sanitize every time it is used, while 15% two or more times a day.

Regarding correct hand washing, 70% chose washing hands, wrists, nails with soap and subsequent drying with a disposable paper towel", 25% "washing hands, wrists, nails with soap and subsequent towel drying cloth and 5% hand washing with soap and subsequent drying with a cloth towel.

The evaluation of the knowledge of the GMP reported that the positive practices that are fulfilled less than 80% were: the use of a clean hat, placing the solid waste in a suitable container lined with an inner plastic bag and with a lid, the use of a jacket and clean, wearing clean undergarments, short, clean nails without enamel, not wearing jewelry (rings, bracelets, watches), and maintaining proper separation of food at the time of preparation to avoid cross contamination between foods of different type and origin. Among the negative practices, the most common was observing the presence of useless or disused equipment such as cardboard, plastics, etc.

When determining the actions to be taken in case of illness of the workforce, 80% considered that food should be handled with caution using masks, gloves and hands washed correctly in each case and 20% considered that food should not be handled under no circumstances (table 2).

Table 2. Actions to be taken in the event of illness by the individuals that make up the sample

Actions to be taken against FBD	Quantity
Handle with care using masks, gloves and properly washed hands	16
Food should not be handled under any circumstances	4

The 32% used cleaning supplies of unrecognized brands, or that did not have corresponding labeling or were stored next to dry food.

The 56% did not have a health book or certificate of good health issued by the doctor. Neither qualifying credential or health checks at least once a year as required by law. 80% without training courses in the area of GMP, but with completed secondary level studies.

From the analysis of the application of GMP by the individuals and each of the analyzed workplaces, 100% do not apply GMP, but a partial compliance was considered in each of the aspects analyzed taking into account a point maximum cut-off of 20% (13 items) on a total of 66 items analyzed (table 3).

Discussion

The results of this work show that, despite having a high degree of knowledge of the personnel, the GMPs are not applied in their entirety in the food stalls, the application is insufficient (10). Although some partially completed it, there is still a long way to go. The correct implementation of GMP requires the collaboration of all food handlers as well as businessmen, industrialists and control authorities (11).

The results obtained showed high knowledge (65%), which is not reflected in the checklist on GMP where the results show that the majority do not meet all of the observed requirements (13-20). Similar results are shown in the work of Montes de Oca Murillo carried out in Esmeraldas-Ecuador, where the degree of knowledge about GMP was high, but it was not reflected in a positive way in the applied observation grid (21-25). In the same way, the results are evidenced in the Mancilla Medina investigation carried out in Valdivia-Chile, where GMPs are not applied, therefore safe food is not guaranteed (26). Other studies carried out show as a result that the respondents had knowledge about food and beverage management (27), and in gastronomic service, and all recognized the need to receive training in food quality standards, but were unaware of control systems and food safety such as Hazard Analysis and Critical Control Points (28).

However, in what was stated by Del Carpio Quijano and Huamán Campos, they indicate opposite results because the majority of GMP compliance is observed, in the case of data collected in two restaurants, for which results contrary to the aforementioned antecedents were estimated whose data They were taken from outdoor fairs (29-30).

Although the affirmative answers were above 65%, it is alarming that around 35% of the manipulators were unaware or did not answer correctly the questions regarding GMP. This, even in its numerical insignificance, is a serious value if one takes into account that the lack of hygiene leads to the frequent finding of enterotoxigenic strains in the hands of food handlers. It is therefore important to highlight the emphasis that should be placed in future training on personal hygiene, mainly on proper hand washing, without neglecting the

Table 3. Aspects of the GMP observed in the stalls of the Simoca-Tucumán Fair

Observed aspects	Yes/Partially/No	%Yes	% Partially	% No
I. Municipal structure	Partially		45%	55%
External conditions		-		
Internal conditions	Partially	-	36%	64%
II. Deposit	Partially	-	5%	95%
III. Personnel	No	-	-	100%
Health condition				
IV. Production	No	-	-	100%
V. Organization	Partially	-	50%	50%
VI. Input reception and storage	Partially	-	20%	80%
VII. Weighing and measuring areas	Partially	-	4%	96%
VIII. Productive areas	Partially	-	6%	94%
IX. Washing area	No	-	-	100%

Fuente: Elaboración propia.

importance of GMP, to prevent outbreaks of FBD. Similar results have been found in other studies where the level of knowledge was high, but when evaluating the implementation of GMP, they were null.

It is a necessity and a social commitment to offer safe and nutritious food. Compliance with GMPs becomes an imperative for food vending markets.

It should be noted that several authors, when describing the hygienic sanitary conditions in street food sales, found a high prevalence of handlers who did not wash their hands, in many of the markets there was no running water and handlers have been frequently observed. foods that also charge customers and in which the use of jewelry was frequent (28,29), which constitutes a worrying fact since it reveals that the lack of hygiene during the food manufacturing process is not an exclusive fact of the markets studied in this research.

This research highlights the inadequate handling of food, derived from the lack of application of GMP, despite indicating that they know about them. Action from the health system and the agencies responsible for ensuring food safety is necessary.

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Contribution of the authors

All authors participated in the entire research process.

Interest conflict

We declare that we have no conflict of interest.

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