

# KNOWLEDGE, ATTITUDES AND PRACTICES EVALUATION ON FOOD HYGIENE AND SAFETY AMONG PERISHABLE FOOD HANDLERS OF A HYPERMARKET IN PORTUGAL



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## INTRODUCTION AND OBJECTIVES

The foodborne illnesses have been reported throughout history as a problem for the public health, both in developed and in developing countries. Thus, all organizations involved in the food chain play an important role. In spite of this, supermarkets and hypermarkets are important links in this chain, whose activities must be carried out correctly and checked regularly in order to guarantee food quality and safety. Thus, the objectives of the present work were:

- ✓ To evaluate *in loco* the practices followed by the food handlers in three sections of a hypermarket, namely, butcher's, charcuterie and fishery;
- ✓ To evaluate the level of knowledge, attitudes and practices in food hygiene and safety of food handlers;
- ✓ To evaluate the role of training and professional experience, as well as, demographic characteristics, such as, gender, age and education level.

## RESULTS AND DISCUSSION

### A) PRP implementation

Generally, **Regulation (EC) No 852/2004** was being fulfilled; however, some **non-conformities** were detected, namely:

#### Hygienization

- ✓ The storage local of hygiene products and cleaning supplies was not identified and it had no door;
- ✓ Material and cleaning products not complying the Hygienization Plan.

#### Raw materials reception

- ✓ Absence of input and exit registers of raw materials;

#### Raw materials storage

- ✓ Outside handle of the refrigerated chamber was damaged;
- ✓ Inexistence of records.

#### Selling area to the public

- ✓ The hygiene products used were not those described on the Hygienization Plan;
- ✓ Lack of hot water in the washing hands facility.

#### Traceability, reporting and collection

- ✓ No temperature control recording;
- ✓ Lack of registration of the opening dates of unboxed products offered for sale to public and of the corrective actions taken in case of non-conforming products.

### B) Food handlers' characteristics

- ✓ Nr. food operators: 10 (70% females and 30% males).
- ✓ Mean age: 36.7 ( $\pm 7.5$ ) years,
- ✓ Education level: Primary school (10%); Middle school (90%).
- ✓ All operators have a permanent contract;
- ✓ All operators had received training.

## MATERIAL AND METHODS

- ✓ Local and period of study: Hypermarket located in Bragança (Portugal) - Butcher's, Charcuterie and Fishery sections, from October 2012 to January 2013;
- ✓ Checklist: Evaluation of the Prerequisite Program (PRP) implemented;
- ✓ Questionnaires: Food operators were asked about: (1) Age, education level, gender, working years and participation in food safety training; and (2) Knowledge, attitudes and practices;
- ✓ Evaluation *in loco* of Good Hygiene and Manufacturing Practices followed by food handlers for four times: The aspects analyzed were the uniform, jewelry, wounds in hands, nails, hand washing, personal attitudes, first aid bag, disposable gloves, textile cloths, money handling, waste bins, expiration dates, raw food versus cooked food, utensils and frying oils.

### C) Knowledge, Attitudes and Practices Assessment

#### Knowledge

Of the 14 questions, only two were answered correctly by all operators, namely:

- ✓ Importance of washing hands before handling food;
- ✓ Use of appropriate food storage conditions in order to minimize contamination risk.

Answers did not differ significantly ( $p > 0.05$ ) by gender, educational level, number of years of service and age, with the exception of the question "The food preparation in advance is more likely to contribute for a food poisoning."

#### Attitudes

Generally, correct attitudes were followed; however, only 50% of food handlers agreed that jewelry and watches should not be worn while handling food.

The responses did not differ significantly ( $p > 0.05$ ) by gender, educational level, working years and age.

#### Practices

Some incorrect practices were reported e.g. food operators did not clean and disinfect the working place before starting work and did not inform their supervisors when they are ill.

The question about the "use of naso-buccal mask at the working place when the operator is ill" was answered incorrectly by all food handlers.

### D) Good Personal Hygiene and Manufacturing Practices Evaluation

- ✓ Incorrect placement of the cap and use of jewelry;
- ✓ Not frequent hand washing during peak flow of customers;
- ✓ Application of sanitation products not indicated in the Hygienization Plan and use of textile cloths.

Physical and Biological hazards

Cross-contamination

## CONCLUSIONS

This study revealed the importance of evaluating periodically the procedures followed by food operators and the effectiveness of the training ministered to them. Thus, areas showing low knowledge levels by operators can be identified in order to ensure food quality and safety of the products sold, and in this way guarantee the consumer's health. Periodic evaluation of the training and actual practices followed by handlers should be checked systematically in order to improve the effectiveness of future training.