



## FOOD PREMISE FACTORS, FOOD SAFETY STANDARD PRACTICES AND FOOD HANDLER BEHAVIOR: REVIEW OF LITERATURE

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### ABSTRACT:

Food borne disease has been associated with microorganisms like bacteria, fungi, viruses and parasites. Most commonly, the outbreaks take place due to the ingestion of pathogenic bacteria like Salmonella Typhi, Escherichia coli, Staphylococcus aureus, Vibrio cholera, Campylobacter jejune, and Listeria monocytogenes. Food handlers must have good hygiene practices to prevent consumers from developing food borne diseases. Food safety and quality audits and inspections are used widely in the food industry to evaluate management systems, obtain certifications to certain food safety and quality standards, assess the condition of premises and products, confirm legal compliance, and many other reasons. Nowadays, the increased interest of consumers on food safety and quality matters, triggered mainly by recent food scandals, has enabled the public and private food sectors to develop a variety of food safety and quality standards. Therefore, there is a need to develop a valid and reliable tool to measure the knowledge and practice towards safe food preparation that contribute to this outbreak

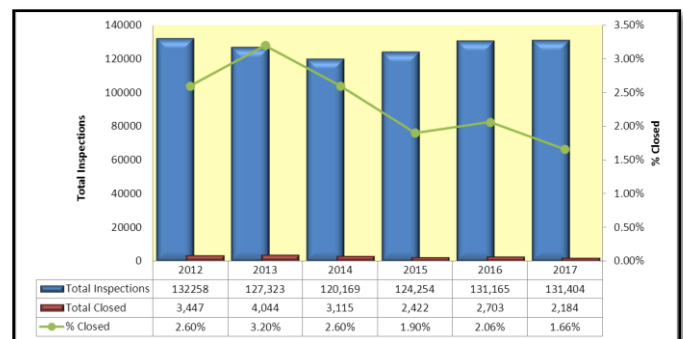
### KEYWORDS:

**FOOD PREMISE, FOOD STANDARD, FOOD HANDLER BEHAVIOR.**

### INTRODUCTION

The role of the domestic compliance is to plan, review and coordinate all activities such as food sampling, inspection of food premises, registrations on food premises. In addition, enforcement activities such as closure of insanitary food premises, seizure of non-complying food, investigation of complaints and management of food safety issues is conducted based on the Food Act 1983 and its regulations. According to the Ministry of Health Annual Report 2017, a total of 131,404 food premises were inspected, and 2,184 (1.66%) insanitary food premises were closed under Section 11, Food Act 1983. This can be seen through the following chart.

### INSPECTION AND CLOSURE OF FOOD PREMISES 2012 TO 2017



\*Source: Food Safety and Quality Programme, MoH

### FOOD SAFETY IN MALAYSIA

In Malaysia, food safety and quality control for all food, either its locally produced or imported and exported, is under the purview of the Food Safety and Quality Programme (FSQP), Ministry of Health (MOH). FSQP has the mandate under the Food Act 1983 to protect the public against health hazards and fraud in the preparation, sale, and use of food, and for matters incidental thereto and connected therewith. In addition, the Food Analysts Act

2011 and the Food Analysts Regulations 2013 register food analysts and regulates the practice of food analysis. This act is also under the purview of the FSQP, MOH. According to Santacruz, 2016, the principles of food safety aim are to prevent food from becoming contaminated and causing food poisoning. This can be achieved through a variety of different avenues, some of which are properly cleaning and sanitising all surfaces, equipment and utensils, maintaining a high level of personal hygiene, especially hand-washing, storing, chilling and heating food correctly with regards to temperature, environment and equipment, implementing effective pest control and comprehending food allergies, food poisoning and food intolerance.

Food safety affects everyone worldwide and will remain a global challenge to human health in the foreseeable future requiring the rapid, sensitive, efficient and inexpensive detection of food contaminants. (Griesche & Baeumner, 2020) Food borne disease has been associated with microorganisms like bacteria, fungi, viruses and parasites. Most commonly, the outbreaks take place due to the ingestion of pathogenic bacteria like Salmonella Typhi, Escherichia coli, Staphylococcus aureus, Vibrio cholera, Campylobacter jejuni, and Listeria monocytogenes. The disease usually happens as a result of toxin secretion of the microorganisms in the intestinal tract of the infected person. (Abdul-Mutalib et al., 2015). Food is essential to life, hence food safety is a basic human right. Billions of people in the world are at risk of unsafe food. Many millions become sick while hundreds of thousand die yearly. The food chain starts from farm to fork and plate while challenges include microbial, chemical, personal and environmental hygiene. Historically, documented human tragedies and economic disasters due to consuming contaminated food occurred as a result of intentional or unintentional personal conduct and governmental failure to safeguard food quality and safety. While earlier incidents were mainly chemical contaminants, more recent outbreaks have been due to microbial agents. The Disability Adjusted Life Years (DALYs) attributed to these agents are most devastating to children younger than 5 years of age, the elderly and the sick (Fung et al., 2018)

#### **DETERMINANT OF FOOD SAFETY COMPLIANCE**

Usually, the level of hygiene in the food premises reflect the quality of the food item, hence restaurant or stall with poor sanitary condition is said to be the contributor to food poisoning outbreak. (Abdul-Mutalib et al., 2015). The hygiene and the quality of school canteens in Penang will be inspect by two parties. First is the District Health Department which represent the Health Ministry. The second party will be the Environmental Health Department of Penang City Council. Both party used different form to do the inspection. The inspection will cover some important aspects such as the canteen area, the food handlers, water supply system, sanitation system, maintenance of the premise and the lightning system. Environmental Health Department of Penang City Council used grading system to grade the canteen entrepreneurs'

effort to comply the food safety SOP. The grade will be A(86% - 100%), B(71% - 85%) and C(51% - 70%). For the premise or canteen that get below 50% there will be follow up action from the Health Department of Penang City Council and there is also possibilities that the premise or canteen to be closed by the City Council.

#### **PROBLEM AND SOLUTION**

Food safety in Malaysia is not considered an issue yet. From the previous year (2005-2015) records, the incidence rate of food poisoning had been fluctuating and despite that, cases continue to occur especially among school students. As a developing nation, it is high-time that Malaysia begins to emphasize on food safety to reduce the burden of food borne illness in the socio-economic development of the country, and at the same time, gain benefits in terms of economic returns and trade through food safety enforcement. Most importantly, public health is achieved through food safety implementation and accentuation(New et al., 2017)

Food safety in school canteen is the responsibility of every person who involved in food service operation especially the food handlers. Awareness of food safety and food hygiene is very important in all human beings, which includes school canteen operator and food handlers. Moreover, the factor that influencing awareness, education and situation at school canteens in Malaysia in terms of food safety issues such guidelines, monitoring, awareness and campaign, also knowledge must be focused and complied from time to time by food handlers, the school canteen operator, school principal and others (Nordin et al., 2015). Nordin (2015) also stated that, effective management of school canteens and human health with the enforcement, adoption legislation, non-legislation as well as guidelines then ensure a perfect human health to address the problem of food safety in school canteens.

Food safety and quality audits and inspections are used widely in the food industry to evaluate management systems, obtain certifications to certain food safety and quality standards, assess the condition of premises and products, confirm legal compliance, and many other reasons. Nowadays, the increased interest of consumers on food safety and quality matters, triggered mainly by recent food scandals, has enabled the public and private food sectors to develop a variety of food safety and quality standards. These standards have both advantages and disadvantages and their effectiveness depends on several factors such as the competency and skills of auditors and the standard used in each case. Although the industry continuously invests in developing and improving these systems, the number of food borne outbreaks per year appears to be increasing. Kotsanopoulos & Arvanitoyannis (2017), suggest that additional measures and techniques or a different approach would be required to further improve the effectiveness of the food safety and quality management systems.

Barros, 2020 said that inspection is one of effective way to determine the compliance of the food safety SOP. Although

health units have implemented food handler certification to operators of food premises, evidence on its effectiveness to improve premise food safety remains inconclusive. Regression models were constructed using inspection data from a health unit in Ontario, Canada, to measure the effect of certification on premise inspection results. We found that premises without certified food handlers at the time of inspection were significantly more likely to fail inspections. The odds of inspection failure were significantly different depending on the premise's cultural cuisine classification. Independently owned establishments had lower odds of inspection failure versus chain operations. Inspector was a significant random effect explaining a small percentage of data variations. These results support the use of food handler certification to improve food safety outcomes at establishments. Further efforts should ensure training programs are accessible and relatable to premise operators, particularly those serving all types of cultural cuisines. (Barros et al., 2020)

Qualification from the authority means all food handler shall undergo a food handlers training and obtain a Certificate of Food Handlers Training from an institution recognized by Ministry of Health. If failed to do so, they can be fine up to ten thousand ringgit or to be imprison up to two years. Food handlers also must medically examined and vaccinated by a registered medical practitioner and if they are suffering or suspected to be suffering from a food borne disease they are not allowed to enter the food premise and handle food. Food handlers are a potential source of infection for many intestinal parasites and other enter pathogenic infections as well (SHARIF et al., 2015). Food handler's knowledge and attitude in the Food Hygiene Regulation 2009 is referring to the way they keep the food premise clean, their knowledge and attitude while handling the food starting from the process of storing food to the process of serving food. Food handlers demonstrate an awareness of food safety but generally fail to translate that knowledge into safe practices. Optimistic bias can explain this phenomenon. Optimistic bias is a psychological phenomenon in which people believe they are less likely to experience adverse events than others. In this case, optimistic bias can negatively influence food safety (Rossi et al., 2017). This is why inspection on food handlers is so important.

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