

A CONCEPTUAL STUDY ON THE AWARENESS OF FOOD BORNE DISEASE AND FOOD HANDLING REGULATION AMONG FOOD HANDLERS

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1. INTRODUCTION

Good public health is one of the main concerns of the government. Most Malaysian love to eat, but how many of them concern the hygiene of the food? In Malaysia, the limitation of time for most people to prepare meals for themselves has increased the demand for food consumption from various food service establishments, and it has also become a trend for most Malaysian to eat out (Noraziah & Mohd, 2012). However, some food premises neglect the importance of hygiene and sanitation and thus, increase the risk of foodborne illness among the consumers. Unfortunately, these cases have always been neglected because most of the incidents were not reported to the enforcement authorities (Soon, Singh, & Baines, 2011). In a comprehensive study by New et al. (2017), most of the business or restaurant owners hire migrant food handlers from underdeveloped countries. The level of hygiene is questionable because usually, the migrant workers are not well trained in hygiene. Due to that, comprehensive food premises inspection must be done regularly to increase food safety awareness among the food owners and food handlers (Salleh, Wani, Abdullah, Chilek, & Hassan, 2017). Most of the studies on food-borne disease have analysed, knowledge, attitudes, and practice among food handlers (Soon et al., 2020; Nur Izyan et al., 2019; Isoni et al., 2019). Thus, to fill in the gap of the previous studies, this paper proposes to measure the level of awareness of the foodborne disease and food handling regulation among food handlers in Malaysia and to identify whether the awareness of foodborne disease predicts the adoption of food handling regulation among food handlers in Malaysia by using knowledge, attitudes, and practices in Kelantan, Malaysia.

2. AWARENESS OF FOOD HANDLERS TO THE FOOD BORNE DISEASE AND FOOD HANDLING REGULATIONS

The public awareness of food safety in Malaysia is considered low (Salleh et al., 2017). Most of the consumers put less attention on the preparation of the food (New et al., 2017). They are more concerned about the fruit tasting, food presentation, and give prioritisation on low price food. This requires high recognition from the public because it will lead to foodborne infections. Foodborne infections have 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* (Abdul-Mutalib, Syafinaz, Sakai, & Shirai, 2015).

3. FOOD SAFETY PRACTICES IN FOOD HANDLING

Food safety and hygiene practices are essential in food handling as they help to protect the health of consumers from foodborne illnesses and food poisoning. According to Youn and Sneed (2003), and Ansari-Lari, Soodbakhsh, and Lakzadeh (2010), the high proportion of reported foodborne diseases were caused by unsafe practices in food handling. Hence, it is of utmost importance that adequate safety practices in food handling be adopted by food service establishments and food processing operations to ensure foods produced and prepared are not contaminated by bacteria, viruses, and other germs, else those who consume the food are in danger of contracting foodborne diseases.

According to the Knowledge, Attitude, and Practice (KAP) model, a sound food handling behaviour develops based on a positive attitude, and a positive attitude is derived from solid knowledge on nutrition and food safety. Therefore, to ensure good food handling practices, it is a prerequisite for the food handlers to be trained in food safety and hygiene. However, there are divided findings on the role of food safety knowledge and attitude as determinants for food safety practices.

Some studies proved food safety knowledge is necessary to influence food safety practice. Toh and Birchenough (2000) believed that the lack of knowledge in food safety can lead to poor hygienic practices by food handlers. This proposition was supported by Abdul-Mutalib et al. (2012) and Dora-Liyana et al. (2018) when their studies revealed that there were positive relationships between the extent of knowledge on food safety and the adoption of food safety handling procedures. Yet, some other studies suggested that the transfer of food safety knowledge to practice is unpredictable. A survey by Akabanda et al. (2017) also indicated that food handlers might not necessarily apply strict food safety procedures during food handling, even when they were adequately trained in the practices.

4. FOOD HANDLING REGULATIONS

The effectiveness and efficiency of government services, particularly on public health among local authorities has been the priority of the federal and state government of Malaysia. However, the performance of local authorities has been subjected to various criticisms, based on the increasing number of complaints from the public (Ibrahim, 2020). Regarding the regulations, there are loopholes in the formulation of rules due to several aspects such as obsolete regulations and lack of enforcement by the government. There is no doubt that sanitation and hygiene are two vital elements when dealing with food. Thus, these two elements should be given priority in all aspects of food preparation. Accordingly, several relevant rules are regulated to govern these matters. The principal regulations are the Food Act 1983 and its subsidiary, Food Hygiene Regulations 2009, which the Minister of Health enacted under the power given by section 34 of the said Act. Other rules include the provisions contained in several By-laws passed by the local authority under the power given by the Local Government Act 1976. To better understand these regulations, the discussions will focus on two aspects, i.e., food establishment and food handling.

The term food establishment refers to a food premise. It is defined under the Food Act

1983 as premises used for or in connection with the preparation, preservation, packaging, storage, conveyance, distribution, or sale of any food, or the relabeling, reprocessing, or reconditioning of any food. The regulation on food establishment can be found in Food Hygiene Regulations 2009, and By-Laws passed by local authorities under Local Government Act 1976 namely: By-Laws for Food Establishment, By-Laws for Management of Food Establishment, By-Laws for Food Handlers, By-Laws for Hawkers, and By-Laws for Trade, Business, and Industries. Generally, these food establishment regulations cover essential issues such as registration and licensing of food premises, conduct, and maintenance of the food premises, and general and specific requirements of the food premises. Implementing these regulations to the food establishments is crucial because the hygiene level in the food establishment reflects the food quality. Therefore, the food establishment with poor sanitary conditions may lead to the spread of foodborne disease. Food handlers are the key players responsible for assessing and implementing appropriate hygiene and sanitation practices. Food Hygiene Regulations 2009 defines food handlers as any persons who are directly involved in the preparation of food, meet food or food contact surface, and handle packaged or unpackaged food or appliances, in any food premises. Thus, food handlers could be anyone who deals with food includes chefs, restaurant workers, waitresses, street hawkers, and all workers of ready-to-eat food in the food and beverage industry.

Among the requirement imposed upon the food handlers in Malaysia are to attend the food handling course organized by the Ministry of Health agencies, been medically examined, and be administered with an anti-typhoid vaccine. Besides, Food Hygiene Regulations 2009, imposed various compoundable offenses for food handlers. They range from clothing to personal hygiene, cleanliness, and behavior of the food handlers. The purpose of enforcing these rules is not to cause trouble to food handlers, but the utmost objective is to protect the public's health. That is why any infringement of these regulations may be subject to the penalty. Apart from that, in terms of literature review on food handlers specifically on food handling and regulation Malaysia is very limited. Hence, a study on the awareness of food handling regulations and foodborne disease among food handlers is timely and reserves due attention because of the increasing trend of the online food providers especially after the Corona pandemic 2019.

5. METHODOLOGY

The targeted population is food handlers in Malaysia who are involved in the business of food handling preparation. According to the statistic of *Majlis Perbandaran Kota Bharu*, 3151 licenses had been issued to the restaurant, coffee house, and cafeteria in 2017 (*Majlis Perbandaran Kota Bharu*, 2018). Survey methods specifically a face-to-face questionnaire will be employed in this study. Thus, to answer the research question, this study will be conducted among the food handlers in Kelantan only. The participants will be asked about the awareness of the regulations that have been used and awareness of the food-borne disease in food handling in Malaysia. The process of distributing questionnaires is expected to be undertaken during the span of 6 months, from December 2020 to May 2021. Data for this study will be analysed using PLS-SEM.

6. RESULTS AND DISCUSSION

As a developing nation, continuous collaborative and comprehensive public health measures on food safety are warranted to reduce the burden of foodborne 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. It is vital to ensure that the regulations are effective in addressing the desired public health conservation; thus, will provide higher returns to the government. The food handlers should follow all the general and new norms of hygiene rules including wearing masks, physical distancing, and frequent hand washing should be maintained to combat the rapid genetic evolution of COVID-19. However, in implementing the enforcements, the expectations on food handling regulations should be achievable. It is vital to ensure that the regulations are effective in addressing the desired public health conservation; thus, will provide higher returns to the government.

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8. REFERENCES

- Abdul-Mutalib, N. A., Abdul-Rashid, M. F., Mustafa, S., Amin-Nordin, S., Hamat, R. A., & Osman, M. (2012). Knowledge, attitude, and practices regarding food hygiene and sanitation of food handlers in Kuala Pilah, Malaysia. *Food Control*, 27(2), 289- 293.
- Abdul-Mutalib N.A., Syafinaz A.N., Sakai K, & Shirai Y. (2015). An overview of foodborne illness and food safety in Malaysia. *International Food Research Journal*, 22(3), 896-901.
- Akabanda, F., Hlortsi, E. H., & Owusu-Kwarteng, J. (2017). Food safety knowledge, attitudes, and practices of institutional food-handlers in Ghana. *BMC Public Health*, 17(40), 1–9.
- Ansari-Lari, M., Soodbakhsh, S., & Lakzadeh, L. (2010). Knowledge, attitudes, and practices of workers on food hygienic practices in meat processing plants in Fars, Iran. *Food Control*, 21, 260–263.
- Dora-Liyana, A. L., Mahyudin, N. A., Ismail-Fitry, M. R., Ahmad-Zaki, A., & Rasiyuddin, H. (2018). Food safety and hygiene knowledge, attitude, and practices among food handlers at boarding schools in the northern region of Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 8(17), 238–266.
- Ibrahim, F. (2020). The efficiency of local governments in Malaysia and its correlates. *International Journal of Management Studies*, 11(1), 57-70.
- Isoni Auad, L., Cortez Ginani, V., Stedefeldt, E., Yoshio Nakano, E., Costa Santos Nunes, A., & Puppini Zandonadi, R. (2019). Food safety knowledge, attitudes, and practices of Brazilian food truck food handlers. *Nutrients*, 11(8), 1784.
- Majlis Perbandaran Kota Bharu. (2018). Retrieved from <http://www.data.gov.my/data/dataset/e2f152bb-e5ce-415c-8229-23a8a4a42c28/resource/dc8d8f2d-585b-4abd-8cee-c082ff512a20/download/dataterbukapelesenanfinal-2018.xls>

- New, C. Y., Ubong, A., Premarathne, J. M. K. J. K., Thung, T. Y., Lee, E., Chang, W. S., Loo, Y. Y., Kwan, S. Y., Tan, C. W., Kuan, C. H., & Son, R. (2017). Microbiological food safety in Malaysia from the academician's perspective. *Food Research*, 1(6), 183-202.
- Noraziah, Ali, & Mohd, A. A. (2012). The food consumption and eating behaviour of Malaysian urbanites: Issues and concerns. *Geografia: Malaysian Journal of Society and Space*, 8(6), 157-165.
- Nur Izyan, F. R., Zuraini, M. I., Maria, M. S., Lovelyna B.J., Maimunah M., & Saidatul Afzan A. A. (2019). A preliminary study on food safety knowledge, attitude, and practices among home-based food providers in Klang Valley, Malaysia. *Malaysian Applied Biology*, 48(2), 157-160.
- Salleh, W, Lani, M. N., Abdullah, W. Z. W., Chilek, T. Z., & Hassan, Z. (2017). A review on incidences of foodborne diseases and interventions for a better national food safety system in Malaysia. *Malaysian Applied Biology*, 46(3), 1-7.
- Soon J. M., Singh, H., & Baines R. (2011). Foodborne diseases in Malaysia: A review. *Food Control*, 22(6), 823-830.
- Toh, P. S., & Birchenough, A. (2000). Food safety knowledge and attitudes: Culture and environment impact on hawkers in Malaysia. *Food Control*, 11, 447-452.
- Youn, S., & Sneed, J. (2003). Implementation of HACCP and prerequisite programs in school food service. *Journal of the American Dietetic Association*, 103(1), 55-60.