

FOOD SAFETY AS PUBLIC HEALTH CHALLENGE



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Introduction

Food is essential for the survival of all living things. However, foods can cause health problems even if they are not stored, processed or fed properly. The importance of food security is growing every day due to the increased demand for food (Savelli, 2021). Unlike other household products, consumers are very concerned about the quality and safety of their food. This is because eating unhealthy foods can cause health problems. Bacteria and other invisible pests in food can cause health-related issues and even be life-threatening. All this requires a safe food transport system to ensure food safety. Unfortunately, the food supply system in many countries is not secure enough. Food security problems are prevalent in some hot regions of the world, such as Africa, Central Asia and South America (Li et al., 2020).

Today, the main causes of the crisis in some countries are food insecurity, a lack of sanitation, and the authorities' inability to take preventive action. Unfortunately, the same problem sometimes arises in developed countries like the United Kingdom. The United Kingdom has faced several food security challenges. Thanks to the health service, most of the problems have been solved and do not endanger the population. They provided all the necessary help to prevent various diseases and ensure food security (Luo et al., 2018). This statement can be demonstrated by looking at the 2008-2009 Salmonella epidemic in America caused by a virus found in peanut butter that killed 9 people.

Data gathered from the United Kingdom background indicates that from 2016 to 2018, almost 5.7% of the population of the United Kingdom suffered from the experience of severe or moderate insecurity of food (Kamboj et al., 2020). Also, 1.7% of the total population faces severe food insecurity issues (Kamboj et al., 2020). Another survey claimed that almost 10% of the population of the United Kingdom is at a high risk of food security (Jankovic et al., 2021).

Based on that, the essay aims to explore food safety as a public health issue with the help of the Tannahill framework. The framework consists of three major dimensions to explore that could support the selection. These dimensions include Prevention, positive health education and lastly, health protection. Also, the Ottawa Model has been considered for managing the concepts in the proper context.

Health Protection

Foodborne illness is an eating disorder that has a great impact on the life of individuals. Studies show that many foods that humans eat contain microorganisms such as bacteria, fungi, viruses and parasites (Kusumawardani, Kartikasari and Pratama, 2021). All of them are becoming one of the health issues suffered by the people. In modern society, the basis of a healthy lifestyle is the type of food eaten, the nutritional value of the food for the human system, and the body's health. In principle, the human system needs food to grow, sustain life, and nourish the body (Latip et al., 2020). With all these basics of nutrition, professionals concluded that proper nutrition is essential for the normal functioning of human organisms and cells (systems). However, nutrition can be considered life support because it provides the nutrients needed by the body's cells and systems to function normally.

The dilemma arises as to the management of such diseases. It is claimed that the management of eating diseases is a solution to a serious problem that can significantly improve the population's quality of life and save budgets for other health needs. According to the Centers for Disease Control and Prevention (or CDC), one in six British people contract food poisoning, and 3,000 people die each year (Kerr and Wilson, 2018). In the United Kingdom, many government agencies are responsible for protecting people from foodborne diseases. In particular, 15 organizations jointly monitor the implementation of at least 30 food safety laws

(Nguyen et al., 2019). However, two central federal units are responsible for the security of the UK food system. These are the United Kingdom's Department of the Food and Drug Administration (or FDA), which is part of the UK Department of Health and Human Services.

Under the model and theoretical underpinning of the Tannahill framework, the first dimensions of presentation have been considered. The case of food and safety management has been discussed concerning the management of governmental measures. Different results in the United Kingdom and the United States have been banned due to the widespread issue of food poisoning (Sharifi-Rad et al., 2020). Their food causes health problems to the individuals in which they suffer a lot. Salmonella cases in 2008-09 are common and cause the closure of restaurants due to the findings of bacterial material. The first and most essential aspect in this regard is to prevent people with such aspects (Liu and Lee, 2018). In this regard, the major steps are to make sure that all the necessary actions have been taken concerning protecting the individual's health. As per the theory, the next step is to provide positive health education that includes people's awareness. Most people have no idea about the issue they are suffering from (Flynn et al., 2019). This creates great issues in their development and management aspects that are necessary to consider. Health protection campaigns could be the best solution to manage all such issues in a wide context. Lastly, with the health protection measures, government and legislative actions must be taken to manage this issue. This has needed application of several policies that could support the issue.

However, the influence of state power must not affect all parts of a market economy. One centre does not have a one-size-fits-all food quality management system. Many institutions implement this project at different levels and within different mandates (Koch, Olatoye and Adedeji, 2018). The quality and freshness of the listed products depend on the store's integrity

and the municipalities' activities. As a result, people continue to poison themselves and suffer from diet-related illnesses (Koch, Olatoye and Adedeji, 2018). The Food and Drug Administration will increase government agency recommendations for use by product managers and consumers to prevent this.

Thus, an overly fragmented food quality management system is a barrier to disease protection in the United Kingdom. However, historically established management systems and their interactions perform the functions assigned to them. The main feature of this system is that the quality control of food quality is completely non-industrial. In other words, regulators are not directly involved in the production process, although they are primarily responsible for the national food market (Imathiu, 2020). Therefore, they can only act as stakeholders for the population's health and not for personal economic benefits.

Individual Change

Individuals in the regular measures have some different roles in the wide context. They have multiple options to choose with relation to their daily actions. Based on the consumption of food at the individual level is also one of the great challenges to manage (Hoffmann, Moser and Saak, 2019). From a wide perspective, food safety is based on five principles: the Prevention of pollution, the separation of raw and cooked food, the timely preparation of food at the right temperature, the correct storage and the use of clean and safe water for cooking.

The above principles are part of a comprehensive system that describes the safe handling of food. The food management system is an internationally recognized system that describes the various aspects of food handling and ensures their safety and suitability for human consumption (Melotto et al., 2020). Every person must have a proper management system for themselves to ensure a healthy lifestyle with the consumption of safe food. The people in the United Kingdom

are much literate and have a sound knowledge of all the associated measures associated with food safety issues.

In this regard, Foodborne illness is a condition that occurs after eating foods contaminated with bacteria, viruses, natural and synthetic substances, and even food parasites. Eating disorders can also be caused by germs that are a part of everyday life. These organisms produce toxins that poison the body (Fung, Wang and Menon, 2018). An epidemic of foodborne illness is commonly referred to as food poisoning. Eating disorders are often characterized by fever, vomiting, diarrhoea and pain in some parts of the body, especially the abdomen.

Salmonella is one of the most common foodborne illnesses. These are the major symptoms and issues that individuals face in their daily lives due to the consumption of unhealthy food (Garcia, Osburn and Jay-Russell, 2020). The disease is majorly caused by salmonella. Bacteria usually enter the digestive tract. The disease is characterized by vomiting, nausea, severe abdominal pain and diarrhoea. Bacteria are commonly found in anthropogenic faeces, livestock and wildlife. This bacterium is usually found in meat and eggs. There are many methods for preventing such diseases. For example, high temperatures must be used when cooking. Consumers should also buy and consume only pasteurized milk and dairy products (Walls et al., 2019). People involved in cooking should clean their hands after using the toilet and when handling uncooked food during cooking. It should also deter people from eating uncooked egg products. Good food storage practices should also be followed.

The case of Shigellosis claimed to be an intestinal disease caused by the Shigella family. This condition is associated with fever, seizures, nausea and vomiting. In severe cases, the patient may be diagnosed with constipation. The disease is spread through consuming food and water contaminated with bacteria (van der Fels et al., 2018).

Apart from this, as per the Health belief model theory, there is a great impact on the individual perception of their health. Such aspects are claimed to be a major role player that develops and engages people with their health-related behaviour. The application of the individual change concerning the food safety issue is considered one of the most essential and basic steps to provide clear insights and a proper understanding of the issues (Watson et al., 2018). This might influence the behaviour of the individuals suffering from these issues.

Community Development

Food safety is one of the major aspects that has a great impact on the development of the community. This directly leads to some major causes of the management in the healthcare sector that are being supported by the community measures (van Teijlingen et al., 2021). A healthy society and community can only be developed with the supply of healthy food and related material for the development of people. Therefore, the authorities have established different rules and standards to ensure food safety to prevent harm from food poisoning. Prakash (2018) defines food safety as handling and guides the proper handling, preparation and storage of food to prevent mishandling. This is a very important implementation in the resultant sector, one of the great revenue contributors to community development. Based on the Ottawa Model, there is a need to properly inspect the material. This is based on the following steps to be followed.

- Set The Stage

The principles that make up a food management system are generally described as being adopted by each country to its requirements. An effective national supervisory system is needed to ensure national consumer protection (Mohamed, 2018). In addition, they help governments ensure that both foods transported and imported in international trade are safe and meet national and international quality and safety standards. Watson (2022) added that the main goals of the

food management system are to protect the population in a particular country by reducing the risk of food-borne diseases, protecting consumers from the dangers of mislabeled, dirty and unsafe food, and stimulating the economy. Trust and development.

- Specify The Innovation

For bringing innovation, there is a developing of the proper food management system for the community. In such a manner, the elements of a national food management system include a food law system, food management policy, food control measures, audit services, laboratory or diagnostic services, and compliance or enforcement. According to Rogan and Healthwatch (2019), the above factors help control the safety of food produced, processed and sold in the country, including imported food, which is one of the major steps towards innovation.

- Access The Innovation

Appropriate food law applies to successfully implementing and maintaining an effective food management system. The law, also known as the Food Act, contains a definition of unsafe food, advice on effective devices to remove unsafe food from the market, and penalties for violating food safety standards (Rizvi et al., 2021). The control system gives clear responsibilities and powers to those responsible for food safety. In addition to laws and food safety measures, the food law system also creates a competent authority that does not fight food safety but can develop a prevention system. Kelly (2019) argues that an effective food safety system needs to be modernized to include changes in food safety needs, such as the growing need for strong enforcement of labelling requirements (Rizvi et al., 2021). It advised governments to apply Codex standards and other countries' experience in developing food safety rules. Thus, national food management systems can meet national and international standards.

- Select And Monitor The Food Policy

An effective food management policy requires a strong governance system with national political and operational cohesion. The nutrition laws discussed in the first part often provide information on diet management methods (Bourdeau-Goulet and Hassanzadeh, 2021). This policy is generally a model designed to guide national authorities in implementing the provisions of food safety legislation. Methods should be improved from time to time to fill gaps that may arise from the dynamics of food handling.

- Monitor Innovation Adoption

Project coordination is a key role of national food management systems. However, it is more important to establish a leadership role responsible for managing matters, including implementing the methods mentioned above (Yazdanpanah et al., 2022). Other required functions of the food management system include creating management systems, monitoring systems, performance measurement systems and flexible applications that can be improved. In addition, it is responsible for providing general policy guidance for the implementation of food management plans. It is important to remember that food management plans and measures can be collectively referred to as food management.

- Evaluate Outcomes Of The Innovation

According to Lawrence, Pollard and Weeramanthri (2019), the administration and enforcement of food law can only be effective through competent and effective monitoring services. The current food inspection service is important for the effective enforcement of food law. Inspectors are in constant contact with industry and the general public. The reputation of a

national food management system depends largely on the accuracy and competence of food inspectors.

Surveillance services typically include on-site inspections, HACCP standards, assessment of action plans and levels, food sampling, detection of food spills, and collection and transmission of evidence in violation of food law (Jeong and Ham, 2018). Inspections also encourage voluntary compliance by establishing strict quality assurance.

According to Salem and Said (2018), sufficient training is needed for inspectors to make the system effective, especially given the complexity of international food transport chains. Some of the skills they need come from proper training in food science technology and mastery of the industrial processes involved in food production. They also need proper training in both laboratory procedures and the HACCP system. The dilemma arises with the food safety control system. This directly leads to having a major impact on the overall action of the management (Kochan, Olatoye and Adedeji, 2018). Based on that, there are multiple options concerning the food safety measures in providing healthy food to the communities.

- Laboratory / Diagnostic Services

Laboratory and diagnostic services are an important part of food control systems, as they promote food control and provide epidemiological data. As stated above, the food control law in force in a particular jurisdiction primarily determines the location of important facilities, such as a laboratory (Flynn et al., 2019). Depending on the needs and requirements of the national food management system, one or more laboratories could be run and managed by a health authority or ministry. According to Sharifi-Rad et al. (2020), what matters is not the number or location of the laboratories but the level of equipment and food management practices they consider to measure their performance.

Adequate facilities to facilitate food's physical, microbiological and chemical analysis are key to the best laboratory performance. According to Hopper, the analyses carried out by those laboratories are important because they help to determine the safety of food distributed throughout the country (Imathiu, 2020). In addition, the findings are important in determining compliance and can also be used as evidence in court proceedings. It is, therefore, necessary to ensure that the staff working in these laboratories are well trained and qualified.

- Compliance Measures

Compliance is an important role of the national food management system. The law requires all parties in the food processing chain, from production to the market, to follow their own rules. Consistency is to provide adequate information (Melotto et al., 2020). The managers must provide the parties concerned with sufficient factual information to ensure that the required standards are met. Food business operators should develop information packages and training programs that meet the specific training needs of food business operators, processors and inspectors. Labs and analysts are key players in sharing information (Walls et al., 2019).

Therefore, to achieve better compliance, these professionals need to be properly trained to achieve a high compliance rate, contributing to the successful implementation of food control.

Case of Food Standards Australia New Zealand (FSANZ) is a law establishing the Australian and New Zealand Food Management System. The Act establishes bilateral food regulators who work closely with the Commonwealth, local and regional authorities to develop and enforce food standards or regulations that become part of the Australian and New Zealand Food Standards Act (Watson et al., 2018). The main purpose of the FSANZ Act, which was established in 1991, is to protect public health and safety in both countries, provide adequate nutritional information to help consumers make informed decisions, and prevent fraud and

behaviour of officers in the food sector. FSANZ monitors the safe delivery of food in both countries.

In particular, FSANS sets food standards that identify ingredients, labels, and contaminants that apply to all foods produced and imported into both countries. The FSANZ's mandate is to develop and reform existing food standards, which are then implemented and enforced by states and territories through their maintenance (van der Fels et al., 2018). The FSANZ Committee is usually involved in all stages of changing or modifying a food standard. It must give final approval before Codex Alimentarius can approve the change. The FSANZ mandate is implemented in both countries through the Council of Ministers, which provides the regulatory framework governing FSANZ decisions.

In Australia and New Zealand, FSANZ is helping to develop standards that define the parameters for food production, processing and labelling. It also helps to set standards that only define primary production in Australia. In addition, FSANZ has developed strategies to monitor and enforce national food management systems, collect and compile market information, and provide advice on risk assessments of imported foods (Garcia, Osburn and Jay-Russell, 2020). In short, the FSANZ plays its part in ensuring the security of the people of both countries by maintaining a secure food supply, regardless of origin.

Conclusion

The development of the appropriate food management measure is considered one of modern society's major and most essential aspects. Food safety is causing several issues that require immediate action concerning public health on both individual and community levels. In such a manner, the government is required to play a great role in the management of actions that could involve major issues.

References

- Bourdeau-Goulet, S.C. and Hassanzadeh, E., 2021. Comparisons between CMIP5 and CMIP6 models: Simulations of climate indices influencing food security, infrastructure resilience, and human health in Canada. *Earth's Future*, 9(5), p.e2021EF001995.
- Flynn, K., Villarreal, B.P., Barranco, A., Belc, N., Björnsdóttir, B., Fusco, V., Rainieri, S., Smaradóttir, S.E., Smeu, I., Teixeira, P. and Jörundsdóttir, H.Ó., 2019. An introduction to current food safety needs. *Trends in Food Science & Technology*, 84, pp.1-3.
- Fung, F., Wang, H.S. and Menon, S., 2018. Food safety in the 21st century. *Biomedical journal*, 41(2), pp.88-95.
- Garcia, S.N., Osburn, B.I. and Jay-Russell, M.T., 2020. One health for food safety, food security, and sustainable food production. *Frontiers in Sustainable Food Systems*, 4, p.1.
- Hoffmann, V., Moser, C. and Saak, A., 2019. Food safety in low and middle-income countries: The evidence through an economic lens. *World Development*, 123, p.104611.
- Imathiu, S., 2020. Benefits and food safety concerns associated with consumption of edible insects. *NFS Journal*, 18, pp.1-11.
- Jankovic, V.V., Velebit, B.M., Lakicevic, B.Z., Mitrovic, R.R. and Milojevic, L.Z., 2021, October. Food allergens–food safety hazard. In *IOP Conference Series: Earth and Environmental Science* (Vol. 854, No. 1, p. 012038). IOP Publishing.
- Jeong, J.Y. and Ham, S., 2018. Application of the Health Belief Model to customers' use of menu labels in restaurants. *Appetite*, 123, pp.208-215.
- Kamboj, S., Gupta, N., Bandral, J.D., Gandotra, G. and Anjum, N., 2020. Food safety and hygiene: a review. *International Journal of Chemical Studies*, 8(2), pp.358-368.

- Kelly, L., 2019, August. Clarifying the regulation of genome editing in Australia: situation for food. In *Transgenic Research* (Vol. 28, No. 2, pp. 161-164). Springer International Publishing.
- Kerr, J.R. and Wilson, M.S., 2018. Changes in perceived scientific consensus shift beliefs about climate change and GM food safety. *PloS one*, 13(7), p.e0200295.
- Kusumawardani, L.H., Kartikasari, A. and Pratama, K.N., 2021. The Effectiveness of Role Play on Changes Attitudes and Food Safety Practised Among School Aged Children. *International Journal of Nursing and Health Services (IJNHS)*, 4(2), pp.180-188.
- Latip, M.S.A., Newaz, F.T., Ramasamy, R., Tumin, S.A. and Noh, I., 2020. How do food safety knowledge and trust affect individual's green considerations during the covid-19 pandemic in malaysia. *Malaysian Journal of Consumer and Family Economics*, 24, pp.261-285.
- Lawrence, M.A., Pollard, C.M. and Weeramanthri, T.S., 2019. Positioning food standards programmes to protect public health: current performance, future opportunities and necessary reforms. *Public health nutrition*, 22(5), pp.912-926.
- Li, Y., Wang, X., Wang, X.Q., Wang, J. and Zhao, J., 2020. Life-long dynamics of the swine gut microbiome and their implications in probiotics development and food safety. *Gut microbes*, 11(6), pp.1824-1832.
- Liu, P. and Lee, Y.M., 2018. An investigation of consumers' perception of food safety in the restaurants. *International Journal of Hospitality Management*, 73, pp.29-35.
- Luo, J., Mi, Z., Gong, D. and Yan, Z., 2018. Analysis and suggestions on food safety strategy in China. *Shipin Kexue/Food Science*, 39(11), pp.263-268.

- Melotto, M., Brandl, M.T., Jacob, C., Jay-Russell, M.T., Micallef, S.A., Warburton, M.L. and Van Deynze, A., 2020. Breeding crops for enhanced food safety. *Frontiers in plant science*, 11, p.428.
- Mohamed, S., 2018. Ethics and Public Health—A South African Perspective. In *African Perspectives on Ethics for Healthcare Professionals* (pp. 235-249). Springer, Cham.
- Nguyen, H.V., Nguyen, N., Nguyen, B.K., Lobo, A. and Vu, P.A., 2019. Organic food purchases in an emerging market: The influence of consumers' personal factors and green marketing practices of food stores. *International journal of environmental research and public health*, 16(6), p.1037.
- Okocha, R.C., Olatoye, I.O. and Adedeji, O.B., 2018. Food safety impacts of antimicrobial use and their residues in aquaculture. *Public health reviews*, 39(1), pp.1-22.
- Prakash, G., 2018. Review of the food processing supply chain literature: a UK, India bilateral context. *Journal of Advances in Management Research*.
- Rizvi, A., Wasfi, R., Enns, A. and Kristjansson, E., 2021. The impact of novel and traditional food bank approaches on food insecurity: a longitudinal study in Ottawa, Canada. *BMC Public Health*, 21(1), pp.1-16.
- Rogan, C. and Healthwatch, A., 2019. Proposal P1050: Pregnancy warning labels on alcoholic beverages Submission to Food Standards Australia New Zealand. *Alcohol*.
- Salem, G.M. and Said, R.M., 2018. Effect of health belief model based nutrition education on dietary habits of secondary school adolescent girls in Sharkia governorate. *Egypt J Commun Med*, 36(3), pp.35-47.

- Savelli, C., 2021. *A mixed-method exploration into the experiences of members of the International Food Safety Authorities Network (INFOSAN)* (Doctoral dissertation, Lancaster University).
- Sharifi-Rad, J., Rayess, Y.E., Rizk, A.A., Sadaka, C., Zgheib, R., Zam, W., Sestito, S., Rapposelli, S., Neffe-Skocińska, K., Zielińska, D. and Salehi, B., 2020. Turmeric and its major compound curcumin on health: bioactive effects and safety profiles for food, pharmaceutical, biotechnological and medicinal applications. *Frontiers in pharmacology*, *11*, p.1021.
- van der Fels-Klerx, H.J., Camenzuli, L., Belluco, S., Meijer, N. and Ricci, A., 2018. Food safety issues related to uses of insects for feeds and foods. *Comprehensive Reviews in Food Science and Food Safety*, *17*(5), pp.1172-1183.
- van Teijlingen, K., Devkota, B., Douglas, F., Simkhada, P. and van Teijlingen, E., 2021. Understanding health education, health promotion and public health. *Journal of Health Promotion*, *9*(1), pp.1-7.
- Walls, H., Baker, P., Chirwa, E. and Hawkins, B., 2019. Food security, food safety & healthy nutrition: are they compatible?. *Global Food Security*, *21*, pp.69-71.
- Watson, D., Nyarugwe, S.P., Hogg, R., Griffith, C., Luning, P.A. and Pandi, S., 2022. The exotopia food safety cultural conundrum: A case study of a UK fish high-risk processing company. *Food Control*, *131*, p.108431.
- Watson, D., Yap, S., Pandi, S., Husband, J. and Tekelas, F., 2018. Brexit and the implications of food safety cultural compliance in the food manufacturing sector. *Acta Scientifica Microbiology*, *1*(4).

Yazdanpanah, M., Moghadam, M.T., Zobeidi, T., Turetta, A.P.D., Eufemia, L. and Sieber, S.,
2022. What factors contribute to conversion to organic farming? Consideration of the
Health Belief Model in relation to the uptake of organic farming by Iranian
farmers. *Journal of Environmental Planning and Management*, 65(5), pp.907-929.

