

## Comparative Analysis Of ‘Food Safety Practices’ For Food Business Operators & Food Handlers In Catering Sector Before And During Covid-19 Pandemic In Pune

**Assistant Professor Puneet Basson,**

*Pursuing PhD in Hotel Management, Savitribai Phule Pune University, Pune*

Co-author

**Associate Professor Deepa Prasad Venkatraman,**

*PhD Guide, Savitribai Phule Pune University, Pune*

### ABSTRACT

*This study was conducted to assess the knowledge and use of food safety practices of catering sector Food Business Operators (FBO's) and Food Handlers (FH's) working in quick service restaurants, hotels, speciality restaurants, cafes and industrial catering companies from Pune city in Maharashtra state of India. 50 FBOs and FHs answered the online survey through questionnaire. Questions asked were related to personal hygiene as per food safety training for catering establishments. It was found that 40% FBO's and FH's have not attended any food safety training in the last 2 years. For those who attended, food safety training was conducted once a year for 84% of the FBO's and FH's. During covid-19, 44% FBO's and FH's have attended covid-19 food safety training till 31<sup>st</sup> August 2020. Frequency of food safety trainings have increased but 66% trainings are conducted by internal company personal. Most of the food safety trainings are repetitive in nature and majority of them have attended food safety supervisor (FSS) training under Food Safety Training and Certification (FoSTaC) before covid-19 pandemic. FBO's and FH's under the age of 40 are trained more frequently and are using the personal hygiene practices effectively. Study concludes that food safety knowledge level of FBO's and FH's increased from 86% before covid-19 pandemic to 96% during covid-19 pandemic. It also highlights that practices of personal hygiene also increased from 45% before covid-19 pandemic to 75% during covid-19 pandemic. Major change required is in the reach of Covid-19 food safety training to FBO's and FH's, which have reached to 44% FBO's and FH's only. Professional are less aware of practices to be followed for food safety during covid-19 pandemic. Therefore, till covid-19 is pandemic, more focus should be on food safety training module of Covid-19 under FoSTaC and government should monitor to make it reach to all FBO's and FH's as fast as possible. As per the need assessment, covid-19 training module should be added in food safety supervisor module and to make it mandatory even after covid-19 pandemic ends. FSSAI should discuss food safety training module with academia and get included in the syllabus of graduate and post-graduate courses of food related industry.*

### OBJECTIVES OF THE STUDY

1. To assess the food safety knowledge level of catering sector Food Business Operators (FBO's) and Food Handlers (FH's) as per Food Safety Training & Certification (FoSTaC) mandated by Food Safety and Standards Authority of India (FSSAI).
2. To compare the food safety knowledge and safe practices followed by catering sector Food Business Operators (FBO's) and Food Handlers (FH's) before and during Covid-19 pandemic.
3. To analyze the factors impacting food safety trainings for the catering sector Food Business Operators (FBO's) and Food Handlers (FH's).

Keywords: Food safety training, Personal hygiene practices, Catering, Food Safety Training and Certification, Food Safety and Standards Authority of India, Food Safety Supervisor, Food Business Operators, Food Handlers, FoSTaC, FSSAI, Pune

### INTRODUCTION

Safe Food – The first step towards healthy body & mind. The increase in incidences of food poisoning and dietary deficiencies in our country is a cause for concern. To curb the problem of food poisoning, Government of India took the initiative and passed the law named as Food Safety and Standards Act,

2006 (FSSA). In 2008, Food Safety and Standards Authority of India (FSSAI) were established under the aegis of Ministry of Health and Family Welfare to enforce the provisions of the law. Under the FSSA act, FSSAI is a single point reference for all matters relating to food safety and food standards in the country.

The FSSAI is assisted by scientific committees & panels in setting standards and central advisory committee in coordination with enforcement agencies. The FSSAI regulates and guides all people engaged in manufacturing, processing, import, transportation, storage, distribution and retail of food, on issues of food safety and nutrition. Process of food businesses licensing and registration started in 2011. Seven key areas have been identified by the FSSAI in 2016, which are:

- Food Standards
- Safe Food Practices
- Food Safety Compliance
- Food testing
- Food Safety Training
- Social & Behavioral Changes
- Consumer Focus

### **FoSTaC (Food Safety Training & Certification) Program:**

Food Safety Training & Certification (FoSTaC) is a training program of Food Safety & Standards Authority of India initiated with the aim to spread education and raise awareness on Food Safety & standards Act, Rules & Regulations among food business operators (FBO's).

### **Objectives of FoSTaC:**

Raising the bar of food safety in the country by

1. Creating an improved environment of self-compliance to FSS Act, Rules & Regulations by the responsible food businesses.
2. Bringing behavioral change and inculcating the culture of food safety in the country.

### **Sectors in Food Industry:**

- Milk and Milk Products
- Meat and Poultry
- Fish and Seafood
- Packaged Water
- Oil
- Bakery
- Manufacturing
- Storage and Transport
- Retail and Distribution
- Catering
- Street Food Vending

### **Stakeholders of FoSTaC:**

Main Stakeholders:

1. FSSAI
2. State FDA
3. Food Business Operators (FBO's)

Implementing Stakeholders:

1. Training Partners
2. Trainer cum Assessor

### **COVID-19 PANDEMIC**

Coronavirus or Covid-19 pandemic which got identified in December 2019 in Wuhan, China and had spread across the world. It was declared Pandemic by World Health Organization (WHO) on 11<sup>th</sup> March 2020. It had disturbed the world economy since then in the form of 'Lockdown' of cities, states and

nations. It had the maximum impact on services sector like tourism, travel, hotels, caterings companies etc. India went into first lockdown of the whole country on 25<sup>th</sup> March 2020. Most of the businesses were kept closed barring essential services like hospitals, banks and policing. Many social and sector specific norms have been identified to deal with the situation.

### FOOD SECTOR TRAINING FOR COVID-19 NORMS

To keep the safety of people during covid-19 pandemic, Covid-19 food sector related norms was established by FoSTaC and circular was issue in the month of May 2020. Trainings are kept online and certificates were distributed to those who successfully completed Covid-19 Online training program. These trainings are coordinated through Empanelled Training Partners of FoSTaC (details on [fostac.fssai.gov.in](http://fostac.fssai.gov.in)) to FBO's and FHs.

### METHOD OF STUDY

Due to Covid-19 restrictions, online survey method is used to collect the data from the FBO's and FH's working in quick service restaurants, hotels, restaurants, cafes and industrial catering companies in Pune city of Maharashtra. A standardised questionnaire was circulated online through e-mail addresses and professional social media channels. Questionnaire was prepared based on Food Safety training module for catering sector by FoSTaC. Data collected relates to age, level of education, company, designation, work experience, knowledge of food safety and utilization of food safety knowledge. Food safety practices related questions were asked from the FBO's and FH's. A section of the questionnaire is focused on comparative questions for before and during covid-19 pandemic. Data collected through questionnaire is tabulated and analysed to derive conclusions and recommendations.

### DATA ANALYSIS

Scale 1: Less informative 5: very informative	Count %	Cumulative %
1	4	4
2	4	8
3	12	20
4	8	28
5	72	100

Table 1

As per data analysed in table 1, we infer that 72% FBO's and FH's have found the FoSTaC training to be very informative and useful for maintaining food safety practices at their workplaces.

Training Frequency Need	Count %	Cumulative %
Every month	16	16
Four times a year	24	40
Thrice a year	8	48
Twice a year	20	68
Once a year	32	100

Table 2

Training Frequency Need	%
More than once in a Year	68
Once a year	32

Table 3

Study through data analysed in table 2 & 3 observed that, 40% of FBO's and FH's have felt the need to increase frequency of trainings to 4 times in a year, which is once a quarter and 68% of FBO's and FH's have felt the need to increase frequency of trainings to 2 times in a year, which is once in 6 months.

Training frequency requirement as desired by 68% FBO's & FH's are for more than once a year. As per mandate of FoSTaC, food safety supervisor training for a participant should happen once in 2 years. Therefore, to satisfy the demand, FoSTaC should change the mandate of training from once in 2 years to once every year.

#### COMPARATIVE DATA ANALYSIS

<b>PARTICULARS</b>	<b>YES</b>	<b>NO</b>
<b>Before Covid-19 Pandemic</b>	<b>%</b>	<b>%</b>
Do you know about Food Safety Training & Certification (FoSTaC under FSSAI)?	100	0
Did you attended any Food Safety training in last 2 year?	64	36
Did you knew about Food Safety hazards?	96	4
Did you knew the reasons of Food Spoilage?	92	8
Did you knew how to control Food Spoilage?	88	12
Did you knew about good personal hygiene?	100	0
Did you knew how food can get spoiled due to bad personal hygiene?	100	0
Did you knew the use of mask for maintaining personal hygiene?	92	8
Did you knew about social distancing norm to maintain personal hygiene?	88	12
Did you knew about Sanitizer and its use in maintaining personal hygiene?	100	0
Did you used Sanitizer regularly?	80	20
Did you knew that pathogens can be passed from one person to another through Food?	76	24
<b>After Covid-19 Pandemic</b>	<b>%</b>	<b>%</b>
Did Food Safety training conducted after Covid-19 pandemic started?	44	56
Did you find something new in this training?	80	20
Do you know Food safety hazards now?	100	0
Do you know the reasons of food spoilage now?	92	8
Do you know how to control food spoilage now?	92	8
Do you know about good personal hygiene now?	100	0
Do you know exactly how food can get spoiled through bad personal hygiene now?	96	4
Do you know the use of Mask in maintaining personal hygiene now?	96	4
Do you know about social distancing norm in maintaining personal hygiene now?	96	4
Do you know Sanitizer and its use in maintaining personal hygiene now?	100	0
Do you use Sanitizer regularly now?	96	4
Do you know pathogens can be passed from one person to another through Food?	84	16
Do you think we should use social distancing norms at our workplace after Covid-19 pandemic?	92	8
Do you think we should use Sanitizer regularly at workplace after Covid-19 pandemic?	96	4

Table 4

From the data analysed, it is observed that FBO's and FH's who have attended food safety training have decreased from 64% before to 44% during the Covid-19 pandemic. FBO's and FH's have identified need of covid-19 food safety norms to be continued even after the pandemic ends like maintaining social distancing while working, regular use of mask, frequent use of sanitizer and washing hands.

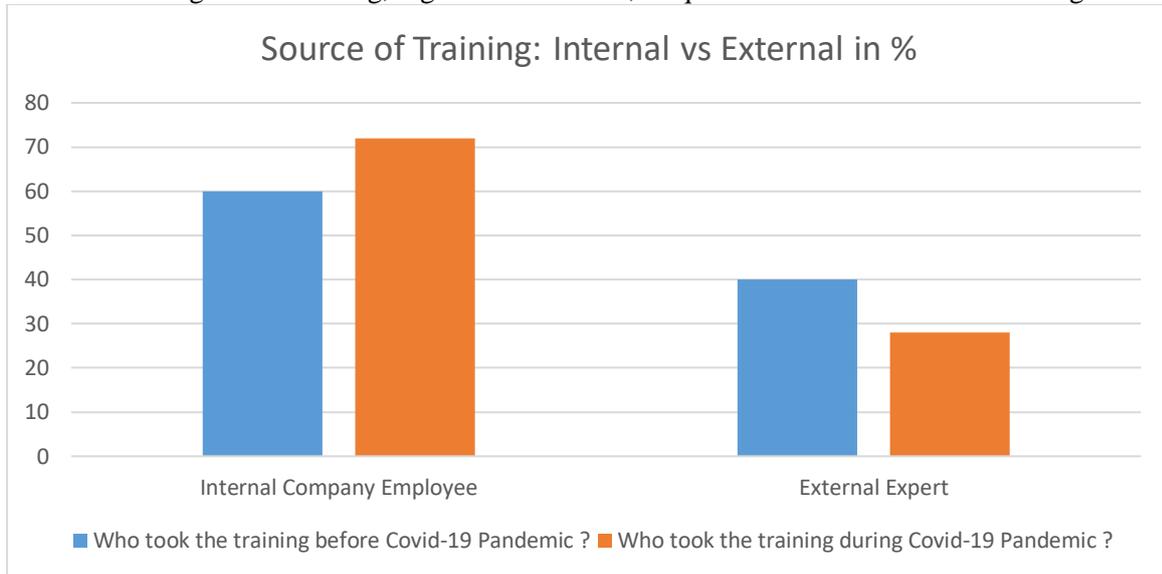


Chart 1

Study observed through chart 1 that before covid-19 pandemic, 40% food safety trainings were conducted through external source and 60% by internal company employee. During covid-19 pandemic, 28% food safety trainings are conducted through external source and 72% food safety trainings are conducted by internal company employee. This implies that during covid-19 pandemic less number of trainings are getting conducted by food safety experts.

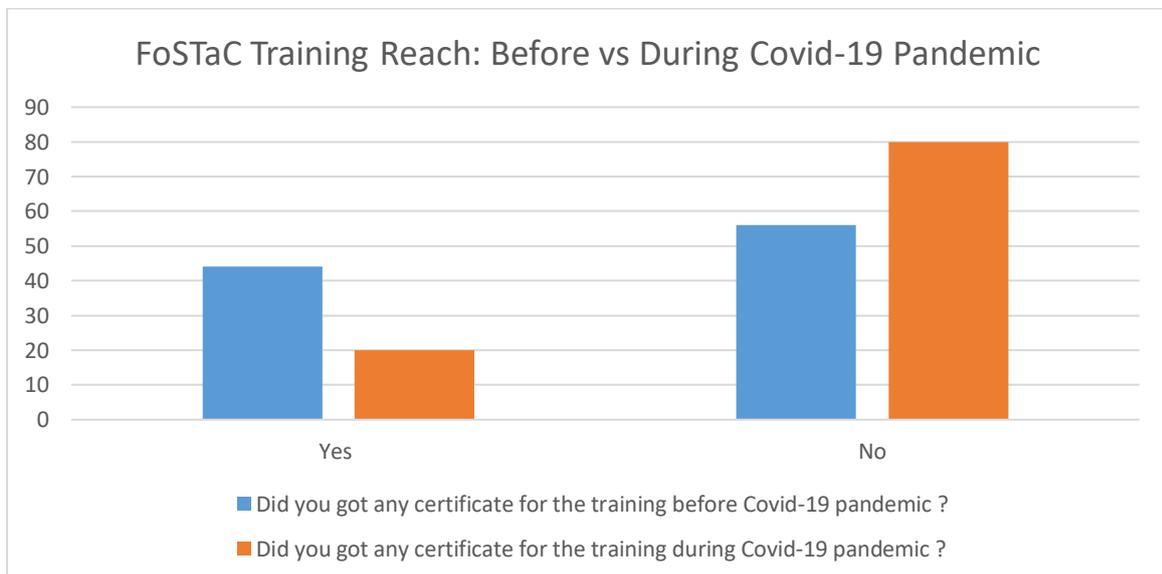


Chart 2

Study observed through chart 2 that before covid-19 pandemic, 45% FBO's and FH's attended and received FoSTaC certificate and 55% didn't attended FoSTaC training. During covid-19 pandemic, 20% FBO's and FH's attended and received FoSTaC certificate while 80% didn't attended FoSTaC training. FoSTaC trainings are assessment based and therefore should be preferred over internally conducted training by the organizations.

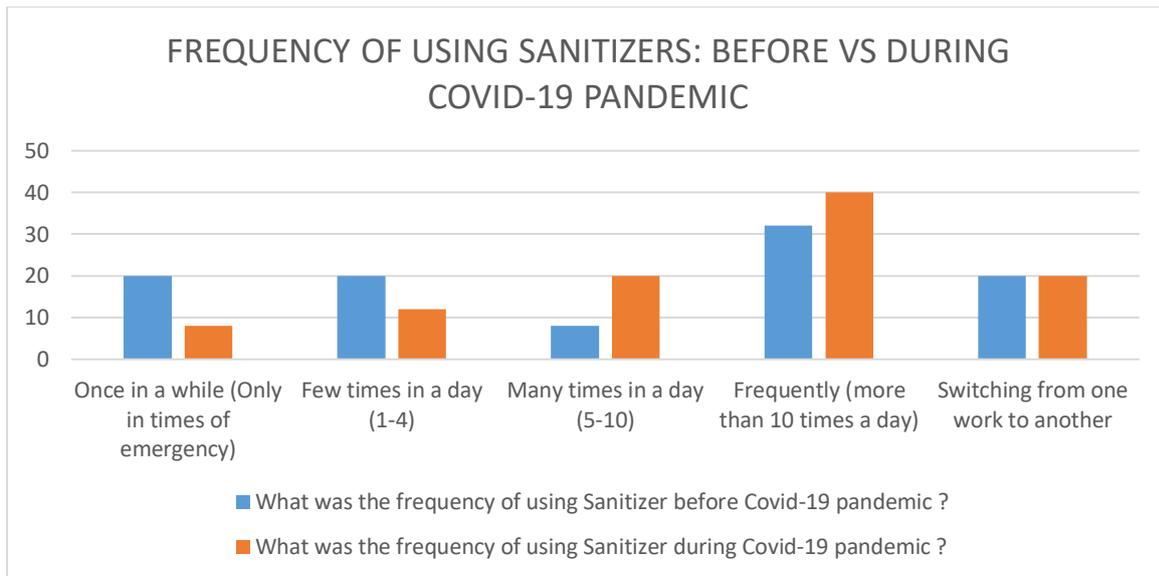


Chart 3

Study observed through chart 3 that before covid-19 pandemic, 60% FBO's and FH's were using sanitizers many times in a day while during covid-19 pandemic percentage have increased to 80% FBO's and FH's.

Frequency of washing hands	Before Covid-19	After Covid-19
Few times in a day (1-4)	24	16
Frequently (more than 10 times a day)	24	36
Many times in a day (5-10)	24	24
Switching from one work to another	28	24

Table 4

Study observed through table 4 that before covid-19 pandemic, 76% of FBO's & FH's were washing hands more than 5 times a day, which during covid-19 pandemic percentage have increased to 84% FBO's and FH's.

Time taken for washing hand (in seconds)	Before Covid-19 %	After Covid-19 %
<= 40	92	84
> 40	8	16

Table 5

Hand washing process as per food safety manual suggest a time frame of more than 40 seconds to get maximum effectiveness. Study observed through table 5 that before covid-19 pandemic, 08% FBO's & FH's were washing hand for more than 40 seconds, which during covid-19 pandemic have increased to 16% FBO's and FH's. Study shows gap of 84% FBO's and FH's not following this food safety practice. Study reflected that this information should be given more emphasis during training and should be applied more rigorously by FBO's and FH's.

## CONCLUSIONS

Food safety trainings under FoSTaC have reached to 64% FBO's and FH's in the last 2 years and knowledge of food safety was high in the certified as well as not certified professionals even before covid-19 pandemic. There was gap between the knowledge and application of food safety practices before covid-19 pandemic. During covid-19 pandemic, the gap between the knowledge and its application have lessened. Covid-19 pandemic have forced FBO's and FH's to be more vigilant in following prescribed food safety practices. With covid-19 pandemic, FoSTaC trainings are available in only online mode and therefore, it is a reason for less number of certified FBO's and FH's as compared to before covid-19 pandemic. Some practices are more in application like washing hands compared to

using the sanitizer. Still, most of the FBO's and FH's are not following the time requirement of hand washing.

Rules have been framed for food safety during covid-19 pandemic for which a separate training program of 2 hours have been planned by FoSTaC, but most of the FBO's and FH's are not aware of it. As per study, demand and need of food safety training is high but currently frequency of trainings are less at once in a year. Now, with covid-19 pandemic training frequency have increased with more food safety trainings conducted by internal company employee. Most of the trainings are without evaluation and assessment of the FBO's and FH's. FoSTaC have a mandate of having 1 food safety supervisor certified out of each 25 FBO's and FH's, who has to train other FBO's and FH's in the company. But as internal trainings are without evaluation and assessment, hence application of food safety practices are still less even during the covid-19 pandemic.

## **RECOMMENDATIONS**

Covid-19 pandemic had created a scenario wherein the need of food safety certified FBO's and FH's have not remain desired but became essential. Therefore, need of food safety certified trainings like FoSTaC where evaluation and assessment is compulsory with a minimum benchmarking should be made mandatory for all FBO's and FH's instead of the current mandate of 1 food safety supervisor trained out of 25 employees working in the handling of food. Certified food safety supervisor than have to train other food handlers in the organization. Also, in the training sessions, focus should be given by trainer on points more related to covid-19 pandemic. Like, washing of hands have become the most important aspect during covid-19 pandemic time to curb the spread. Time limit for washing hands have been increased from 20-30 seconds to 40-50 seconds. For the current covid-19 pandemic situation, to make covid-19 food safety training available to maximum FBO's and FH's, FoSTaC should put more efforts on advertising the training through connecting more frequently with food business operators and empanelled training partners through social media platforms. Also, as per the suggestion by FBO's and FH's, food safety rules and regulations formed for covid-19 should be added in the food safety supervisor training module and should be made mandatory even after covid-19 pandemic. Suggestion to the government authorities is to include a module of food safety training into the syllabus of graduate and post-graduate courses like dairy technology, food technology, hotel management, food processing etc. through consulting the academia. If the said training module gets included in the syllabus and taught at academic level, it will create a pool of professionals who are trained to follow food safety, hygiene and sanitation at their work places. Due to the Covid-19 pandemic, it should be taken at priority by Food Safety and Standards Authority of India (FSSAI) at the national level and Food & Drug Administration (FDA) at state level. FoSTaC should allow all Empanelled Training Partners (ETP) to conduct online trainings, as many companies face challenge to send employees for offline trainings. Many companies have employees spread across cities or states, and have requirement of training for all employees. In that condition, online training is the best option. FoSTaC should also review the certificate validity time which is 2 years. As demand is to increase the frequency of trainings, suggestion is to reduce the validity of certificate to 1 year. This step will increase the number of trainings for FBO's and FH's conducted by food safety expert trainer from FoSTaC. Covid-19 related training should be prioritised till the situation is pandemic and should be made compulsory for all FBO's and FH's by the authorities.

## **ACKNOWLEDGEMENT**

The researcher expresses his sincere gratitude and heartfelt thanks to Dr. Deepa Prasad Venkatraman, Associate Professor, PUMBA, Savitribai Phule Pune University, Pune, Maharashtra for her valuable guidance, patience and immense support throughout the period of study. He would like to thank all the catering professionals from quick service restaurants, hotels, speciality restaurants, cafes and industrial catering companies in patiently filling out the information required for the study.

## **REFERENCES**

1. Clayton, D. (2004). Understanding and predicting FBO's and FH's' implementation of specific food safety practices using social cognition models (Doctoral dissertation, Cardiff Metropolitan University).
2. Green, L. R., Radke, V., Mason, R., Bushnell, L., Reimann, D. W., Mack, J. C., ... & Selman,

- C. A. (2007). Factors related to food worker hand hygiene practices. *Journal of food protection*, 70(3), 661-666.
3. Husain, N. R. N., Muda, W. M. W., Jamil, N. I. N., Hanafi, N. N. N., & Rahman, R. A. (2016). Effect of food safety training on FBO's and FH's' knowledge and practices. *British Food Journal*.
  4. Ismail, F. H., Chik, C. T., Muhammad, R., & Yusoff, N. M. (2016). Food safety knowledge and personal hygiene practices amongst mobile FBO's and FH's in Shah Alam, Selangor. *Procedia-Social and Behavioral Sciences*, 222(2016), 290-298.
  5. Joseph, A. (2018). Practice of food safety among restaurant workers in Chennai and the impact of an awareness programme on their knowledge of food safety. *International Journal of Home Science*, 4(1), 274-277.
  6. Lazou, T., Georgiadis, M., Pentieva, K., McKeivitt, A., & Iossifidou, E. (2012). Food safety knowledge and food-handling practices of Greek university students: A questionnaire-based survey. *Food Control*, 28(2), 400-411.
  7. Lee, K. E., & Ryu, K. (2004). Influences of school food service employees' food safety training on food safety knowledge and practices. *Korean J Community Nutr*, 9(5), 597.
  8. Manes, M., Kuganantham, P., Jagadeesan, M., Laxmidevi, M., & Dworkin, M. (2016). A Step Towards Improving Food Safety in India: Determining Baseline Knowledge and Behaviors Among Restaurant Food Handlers in Chennai. *Journal of Environmental Health*, 78(6), 18-25.
  9. Ovca, A., Jevšnik, M., & Raspor, P. (2014). Food safety awareness, knowledge and practices among students in Slovenia. *Food Control*, 42, 144-151.
  10. Shukla, S., Singh, S.P. and Shankar, R. (2018), Food safety assessment in India: modelling enablers, Benchmarking: An International Journal, Vol. 25 No. 7, pp. 2478-2495.
  11. Siau, A. M. F., Son, R., Mohhiddin, O., Toh, P. S., & Chai, L. C. (2015). Food court hygiene assessment and food safety knowledge, attitudes and practices of FBO's and FH's in Putrajaya. *International Food Research Journal*, 22(5), 1843.
  12. Zanin, L. M., da Cunha, D. T., de Rosso, V. V., Capriles, V. D., & Stedefeldt, E. (2017). Knowledge, attitudes and practices of FBO's and FH's in food safety: An integrative review. *Food Research International*, 100, 53-62.