International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

http://ijpsat.ijsht-journals.org
Vol. 29 No. 2 November 2021, pp.171-179

Implementation Status, Knowledge and Attitudes of Traders on Inspection and Rating of Food Handling Establishments in an Urban Area, Sri Lanka

S.M Arnold[1], T.L.C Somatunga[2], R.P.P Karunapema[3], M.S.K Wickramathilake[4]

H.M.R.C. Sampath[5], C.A Hettiarachchi[6], K.A.R.I Kodithuakku[7], S.D. Samarasekera[8], N.G.S Panditharathna[9], H.M.C.P Ariyadasa[10], A.M Niroos[11]

[1-11] Ministry of Health, Sri Lanka

Abstract

Background: Safe food is a basic and fundamental need of humans. In Sri Lanka, food safety is largely achieved through the implementation of the Food Act of 1980. Other than the legal interventions, routine departmental procedures contribute to sustain food safety. Inspection of food establishments and grading by using the format for grading food establishment (H800) is the main method of regular monitoring in order to achieve and sustain food safety.

Methods: The research is a cross sectional descriptive study and 427 traders participated. The research assessed the inspection of food establishments and grading program by using the H800 format in terms of knowledge, attitudes and implementation.

Results: Inspection of food establishments and grading them using the H800 format and awareness among traders on H800 are not satisfactory.

Conclusions: The food premises inspection programme by using H800 form is unsuccessful. It is recommended revised the H800 form to make it simpler and user friendly and to monitor grading program by supervising officers and higher authorities.

Keywords – Food establishment grading, Food safety, Food hygiene, Sri Lanka.

I. INTRODUCTION

The food laws were traditionally designed to achieve the objectives of protecting the consumer against health hazards and food related fraudulent practices[1]. Food control is defined as a mandatory regulatory activity of enforcement by national or local authorities[2]. Legislation and control mechanism should be flexible enough to allow it to deal with developments in technology, emerging hazards, changing consumer demands and new requirements for trade[3].

In addition to legislation, the departmental circulars and guidelines also contribute. In order to ensure food safety, institutional provisions on production and distribution systems should be also strengthened[4]. Grading food establishment by using a check list called H800 form is one of the departmental requirements which is to be conducted by Public Health Inspector (PHI) who is also an Authorized Officer under the Food Act of Sri Lanka. The reputation and integrity of the food control system depends to a large extent, on their integrity and skills[2].

Corresponding Author: S.M Arnold

Health education is needed to raise the level of public as well the food trader's awareness of the factors leading to the spread of these diseases. The best way to do this is through the primary health care system, based on activities on both scientific knowledge and local food-related customs and behaviours[5]. Education of the food handlers on food safety and promotion of safe practices are facilitated by the PHI in Sri Lanka.

The Public Health Inspectors are required to carry out inspection of the food handling establishments and rate the establishment according to the level of safety and hygiene of the food handling establishment. The food establishments are graded as A, B, C and D establishments. In order to carry of the inspection objectively and grade the food handling establishment the Ministry of Health introduced a form "H 800 - Grading of Food Handling Establishments"[6]. The PHI is required to provide necessary guidance and awareness to the traders on deficiencies identified and measures that should be taken to address the deficiencies. Depending on the grading the PHI is supposed to make follow up visits. It is A grade in 6 months, B Grade in 3 months and C & D grades monthly. During the follow up visits the PHI inspects the establishments and keeps records in the follow up sheet of the H800 form[6]. On the other hand, the H800 form acts as a tool to facilitate the traders for themselves to be aware of the deficiencies and make improvements and avoid prosecutions in a court of law.

Reorientation of public health programmes requires an evidence based scientific approach[7]. Therefore, studying the implementation of the inspection of food handling establishments and trader's knowledge and attitudes on the procedure are of importance as any intervention to improve the implementation should be based on scientific evidence.

II. METHODS

The study is a descriptive cross-sectional study, carried out in the Battaramulla Medical Officer of Health (MOH) area in the District of Colombo Western Province. Battaramulla MOH area comes under the Colombo Regional Director of Health Services (RDHS) area and situated within the local authority of Kaduwela Municipal Council. The area populated with all ethnic groups (Sinhala, Tamil and Moor) belong to all religions (Buddhist, Hindu, Catholic and Muslim) of Sri Lanka. All types of food establishments (Factory, Hotel, Bakery, Tea kiosk/Sank bar, Grocery, Supermarket and Others) from urban to rural tradition are available in the area.

The study population consists of persons in charge of food handling establishments in the Battaramulla MOH area. All food handling establishments including Food Factory, Hotel, Bakery, Tea kiosk/Sank bar, Grocery, Supermarket and Others (e.g., vegetable stalls / fish stalls) which had been functioning for more than 6 months, their traders (as the manager or owner) who had served at least last 6 months' period and the traders copy of H800 forms were included in the study. Street food vendors where rating is not practically carried out using H800 form and their traders were excluded.

Sample size was calculated using the Lemeshow formula. Considering standard deviation as 1.96 and 5% confidence interval, estimate proportion as 50% and non-respondent rate as10%, final sample size was taken as 427. The list of food handling establishments in each of the PHI area of the Battaramulla MOH area was obtained. The respective establishments from each PHI area were selected with simple random sampling. A pre-tested interviewer administered questionnaire was used to collect data form traders. A pre-tested checklist was used to assess the H 800 form.

III. RESULTS

All eligible participants (N=427) participated in the study.

Socio demographic characteristics

Of the study sample a majority (76.6%) were males. A majority were in the age group between 20-40 years (51.3%). A majority (44.7%) were studied up to advanced level.

Table 1: Distribution by sociodemographic factors of traders

Description	Number (N=427)	Percentage
Age		
IV. 20-40 YEARS	**V. 219**	**VI. 51.3**
41 – 60 years	140	32.8
Above 60 years	68	15.9
Sex		
Male	327	76.6
Female	100	23.4
Highest educational qualification		
No formal education	08	1.9
Upto Grade 5	08	1.9
Upto Grade 8	23	5.4
Upto Ordinary Level	150	35.1
Upto Advanced Level	191	44.7
Diploma	33	7.7
Degree	14	3.3

Service Period

A majority (40.0%) had a total service experience of 1-5 years, while (48.0%) had a service experience of 1-3 years in the present station. Most (34.4%) of food establishments were functioning for more than 10 years.

Table 2: Distribution by service factors of traders

Factor	Number (N=427)	Percentage
Total experience in food trade		
1 – 5 years	171	40.0
6 – 10 years	102	23.9
11 – 15 years	39	9.1
16 -20 years	46	10.8
Over 20 years	69	16.2
Experience in the present establishment		
6 months – 1 year	45	10.5
1year – 3 years	205	48.0

3 years - 5 years	62	14.6
5 years – 10 years	47	11.0
Over 10 years	68	15.9
Duration of functioning of the food establishment		
6 months – 1 year	48	11.2
>1year – 3 years	78	18.3
>3 years - 5 years	85	19.9
>5 years – 10 years	69	16.2
Over 10 years	147	34.4

Knowledge on rating of food establishments using the H800 format

Majority's (56.7%) awareness on rating of food establishments using the H800 format was unsatisfactory. Further, 72.6% participants were had unsatisfactory knowledge on grading. Follow-up visits were satisfactory only in 36.3% establishments.

Table 3: Distribution by level of knowledge on rating of food establishments using the H800 format

	Knowledge area	**Satisfactory N (%)**	**Unsatisfactory N (%)**	**Total N (%)**
1.	Awareness of H800 format	185 (43.3)	242 (56.7)	427 (100.0)
2.	Purpose for H800 form is used	177 (41.4)	250 (58.6)	427 (100.0)
3.	Gradings given under H800	117 (27.4)	310 (72.6)	427 (100.0)
4.	Ability to achieve higher grading	163 (28.2)	264 (61.8)	427 (100.0)
5.	Requirement for the trader to have a copy of the H800	109 (25.5)	318 (74.5)	427 (100.0)
6.	Follow up visit by the PHI	155 (36.3)	272 (63.7)	427 (100.0)
7.	Areas assessed using the H800	162 (38.0)	265 (62.0)	427 (100.0)

Note: 50% or above considered as satisfactory level

Attitudes on rating of food establishments using the H800 format

A majority (97.2% and 98.1% respectively) greed that food establishments should always be maintained in a hygienic manner and food sold to consumers should always be safe. Majority (65.1%) neither agreed nor disagreed the on H800 as a good instrument to inspect food establishments.

Table 4: Distribution by attitudes on rating of food establishments

	Statement	Disagree	Neutral	Agree	Total
		No (%)	No (%)	No (%)	No (%)
1.	Food establishments should always be maintained in a hygienic manner	00 (0.0)	12 (2.8)	415 (97.2)	427 (100.0)
2.	Food sold to consumers should always be safe	00 (0.0)	08 (1.9)	419 (98.1)	427 (100.0)
3.	As the manager it is my responsibility to see the food establishment is kept in a hygienic manner	00 (0.0)	20 (4.7)	407 (95.3)	427 (100.0)
4.	As the manager it is my responsibility to ensure the safety of food sold	00 (0.0)	16 (3.7)	411 (96.3)	427 (100.0)
5.	The H800 format is a good instrument to inspect the food establishment	00 (0.0)	278 (65.1)	149 (34.9)	427 (100.0)
6.	The PHI gives me adequate guidance based on the outcome of the inspection using the H800	00 (0.0)	294 (68.8)	133 (34.2)	427 (100.0)
7.	It is my responsibility to keep the establishment copy of H800 in safe place for future reference	00 (0.0)	320 (74.9)	107 (25.1)	427 (100.0)
8.	It is my responsibility to see the recommendations made under the H800 are carried out	00 (0.0)	271 (63.5)	156 (36.5)	427 (100.0)
9.	I am satisfied with the follow up visits made by the PHI to inspect the establishment using the H800	07 (1.6)	279 (65.4)	141 (33.0)	427 (100.0)
10.	The H800 is a useful tool which facilitate traders in their food safety and hygiene activities	00 (0.0)	263 (61.6)	164 (38.4)	427 (100.0)

Level of implementation of Food handling establishment rating using the H800 format

Just above half (54.1%) of food establishments were not graded by using H800 forms: however, most (57.8%) of food establishments were inspected by Public Health Inspector at-least once in last 6 months.

Table 5: Distribution by the level of implementation of Food handling establishment rating using the H800 format

	Implementation of H800	**Yes** **N (%)**	**No** **No (%)**	**Total** **No (%)**
1.	Food establishment has been inspected by the PHI at least once in the past 6 months	247 (57.8)	180 (42.2)	427 (100.0)
2.	Inspection has been carried out using the H800	196 (45.9)	231 (54.1)	427 (100.0)

Note: Item 2 - "No" contains number where H800 was not available for verification

Adherence to the guideline by Public Health Inspectors in procedures related to the rating of food handling establishments using the H800 format

Trader's copy was received only in 54.1% food establishments and out of that 57.2% establishments did not have the copy. Majority (94.5%) of H800 forms were completely filled and 71.0% establishments were correctly graded as per the criteria.

Table 6: Distribution by adherence to the guideline by Public Health Inspectors in procedures related to the rating of food handling establishments using the H800 format

	Guideline	**Yes (%)**	**No (%)**	**Total (%)**
1.	Traders copy of the H800 has been given by the PHI to the trader	196 (45.9)	231 (54.1)	427 (100.0)
2.	Traders copy of the H800 is available in the food establishment	183 (42.8)	244 (57.2)	427 (100.0)
3.	Follow up visits have been done by the PHI during past 6 months	222 (52.0)	205 (48.0)	427 (100.0)
4.	All follow up visits have been entered in the traders copy	152 (83.1)	31 (16.9)	183 (100.0)
5.	All relevant sections have been filled in the H800	173 (94.5)	10 (5.5)	183 (100.0)
6.	Grade has been entered in the H800 form	183 (100.0)	00 (100.0)	183 (100.0)
7.	Correct grading has been given as per the marking scheme in the H800	130 (71.0)	53 (29.0)	183 (100.0)
8.	Trader has been made aware of the grading	153 (61.9)	94 (38.1)	247 (100.0)
9.	Trader has been provided with guidance/advice based on the findings of the H800 inspection	106 (42.9)	141 (57.1)	247 (100.0)

Note: Item 2-No response contains number where trader was not aware where the H800 was kept

Item 4, 5, 6, 7 - Denominator taken as 183 (Availability of traders copy)

8, 9 – Denominator taken as 247 (Food establishment inspected by PHI)

VII. Discussion

Near one-third of the populations of developed countries are affected by foodborne illnesses[8,9] Increase in food-borne diseases may be due to a lack of reliable quantitative data on incidence of diseases[5]. Near majority of the population in developed countries dine in restaurants[10,11]. A study was conducted to test the hypothesis that violations found during routine restaurant inspections predicted food-borne out-breaks in Finland[12]. Therefore, regular inspection of food establishments is critical. In Sri Lanka, grading using the H800 form is not legally identified by the Food Act of Sri Lanka; therefore, grading using the H800 form is merely a health departmental requirement.

Regular inspection and grading of food establishment is a key activity to establish food safety in many countries. This not only ensures food safety but also the grade is a very useful indicator for consumers to select a better service provider to protect their health. A US study in Washington, found that restaurants with poorer results on inspections were more likely to have food-borne disease outbreaks[13]. Therefore, displaying the grade to consumers is important. The system of categorization of food establishments in United Kingdom is termed as 'Food hygiene rating'. Scotland has gone a further step ahead by displaying inspection result either as 'pass' or 'improvement required'.

The H800 form is mainly based on food hygiene regulations formed under the Food Act of Sri Lanka. The current H800 form is actually based on Food (Hygiene) Regulations of 1989, which is the predecessor of the current Food (Hygiene) Regulations of 2011. Therefore, the current H800 form could be considered as outdated.

Most of owners/managers are educated up to ordinary level or advanced level. Therefore, the specific knowledge on food safety could be assumed to be poor. When such persons are managing, controlling and supervising food handlers who actually handle foods, naturally food safety is in a treat. Since most of owners/managers are in their adult age (20-40), they have potential to learn more on food safety and food hygiene; however, there is no such training course available to them in Sri Lanka. Since majority of them retain in the service for few years in the same or different premise, it is worth to follow an objectively design food safety training.

Owners/managers do not receive awareness on H800 format routinely; therefore, it is not surprising to have unsatisfactory knowledge on H800 form. It is notable that they have unsatisfactory knowledge in all aspects in relevant to H800 form. The maximum knowledge (43.3%) that they had is only on the presence of the H800 form and that is probably because they receive a copy of the format in each inspection. Unsatisfactory Knowledge (72.6%) on the grading is critical as they are eventually clueless about the food safety status of their food premises. In that case, outcome of grading is naturally poor as an improvement cannot be expected as they even don't know the meaning of the grade they receive. However, since managers do have positive attitude on grading of food establishments using H800, it has a high potential to improve food hygiene, if the grading happens properly and regularly proceeded by a good awareness program.

Public Health Inspector (PHI) being the main category of Authorized Officer does not only involve in food safety activities but also involve in activities related to communicable diseases, non-communicable diseases, school health, environmental health and Occupational health. Most of the work of a PHI is focused on dengue prevention activities due to high morbidity and mortality of dengue fever. Therefore, the Public Health Inspector does not have adequate time to spend on food safety activities. This has been proven from the results as only nearly half of the food establishments are inspected regularly by PHIs and it is less than half of inspected establishments are graded by using the H800 format.

Unlike in Sri Lanka, most of other developing and developed countries have a separate officer to look after food safety. Though, a Food Inspector is identified as an Authorized Officer under the Food Act of Sri Lanka, they are available only in very few Municipal Council areas with very limited numbers.

Another reason for non-compliance could be the inadequate functions of the Food Authorities. The Food Authority is the Municipality in the Municipal Council area. The Medical Officer of Health is the Food Authority for urban and rural local

government areas. Other than being the Food Authority the Medical Officer of Health is also an Authorized Officer. Therefore, the Medical Officers of Health have to take the major responsibility of non-implementation of the activities related to food safety including inspection of food establishment using the H800 format.

Unsatisfactory inspection level and grading level of food establishments reflects the poor quality of food control program of the country. Other than the unavailability of dedicate officers for food safety activities at field level, inadequate monitoring, evaluation and training could have been contributed to this poor outcome.

VIII. CONCLUSIONS

Grading of food establishments using H800 form is a very useful tool to ensure food safety of the country and should be continue in future too. However, format is outdated and need to be revised and simplified.

Inspection of food establishments and grading them using the H800 format is not satisfactory. It is recommended to appoint separate officers dedicated for food safety activities as Sri Lanka currently does not have a such strong implementing body.

Awareness among traders on H800 grading is poor; therefore, it is recommended to establish a regular awareness programme in PHI areas. A standard awareness program should be developed with a handbook by the ministry of health at the central level to ensure the uniformity of the messages.

The Medical Officer of Health should give priority to food safety activities similar to the priority given for maternal and child health activities in his/her routine duties. He/she should supervise and review on food safety activities carried out by PHI.

REFERENCES

[1] Ministry of Health (2015). Annual Health Bulletin, Sri Lanka. Ministry of Health: 2015

[2] World Health Organisation (2003). Assuring Food Safety and Quality. Guidelines for strengthening National Food Control Systems. A Joint FAO/WHO publication, Geneva: 1-76.

[3] Orriss GD (2002). Food safety capacity building. FAO/WHO Global forum of food safety regulations, Morocco: pp1-15.

[4] Jaysuriya DC (1990). Overview of food safety legislation in Asia: The challenges of the 90's. First Asian conference on Food safety. Malaysian Institute of Food Technology, Kuala Lumpur: pp172-176.

[5] Thudawe PI, Wickramanayake TW (2001). An analytical framework for nutritional investment in Sri Lanka. Ministry of Plan Implementation, Nutrition Coordination Division. Sri Lanka

[6] Ministry of Health (2011). Food Handling Establishments Rating Form – H800

[7] Wickramanayake TW (1996). Food and Nutrition. Hector Kobbakaduwa Agarian Research and Training Institute, Sri Lanka: pp359 –360.

[8] World Health Organisation (1990). Report of the Regional Seminar on Food Safety Legislation, 27-30 August 1990. WHO Regional Centre for the Promotion of Environmental Planning and Applied Studies, Kuala Lumpur.

[9] Olsen SJ, MacKinnon LC, Goulding JS, Bean NH, Slutsker L (2000). Surveillance for foodborne-disease outbreaks, United States, 1993–1997. CDC Surveill Summary. 2000; 49: pp1–62.

[10] National Restaurant Association (2001). National Restaurant Association Industry at a glance. National Restaurant Association. 10-8-2001. [Oct 2001]. Available from: http://www.restaurant.org/research/ind_glance.cfm

[11] Ebbin R (2001). Americans' dining-out habits. Restaurants USA. 2001; 20: pp38–40

[12] Mäkela, S, Lunden J, Heikkila, J, Nevas M, (2015). Consistency in inspection processes of food control officials and efficacy of official controls in restaurants in Finland, Food Control, Volume 57, November 2015, pp 341-350

[13] Irwin K, Ballard J, Grendon J, Kobayashi J, (1989). Results of routine restaurant inspections can predict outbreaks of foodborne illness: The Seattle–King County experience. Am J Public Health. 1989; 79: pp586–590