

# Knowledge, practices of food safety of establishment owners, food processors, and customers to prevent the Covid-19 pandemic at foodservice businesses in Son La city in 2020

Nguyen Thi Thanh Nga<sup>1\*</sup>, Nguyen Hung Long<sup>2</sup>, Ninh Thi Nhung<sup>3</sup>, Pham Thi Kieu Chinh<sup>3</sup>

<sup>1</sup>Northwestern University, Son La, Vietnam

<sup>2</sup>Vietnam Food Administration, Hanoi, Vietnam

<sup>3</sup>Department of Nutrition & Food Safety, Thai Binh University of Medicine and Pharmacy, Thai Binh, Vietnam

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## Abstract

Ensuring food safety for foodservice businesses is extremely necessary during the current complicated situation of the Covid-19 pandemic. This study has evaluated the knowledge and practices on food safety of establishment owners, food processors, and customers to prevent the Covid-19 pandemic at foodservice businesses in Son La city in 2020. The results show that over 75 % of establishment owners knew regulations to ensure food safety in the prevention of the Covid-19 pandemic, and 100 % of establishment owners were trained in disseminating and guiding pandemic prevention documents. Food processors who have good knowledge and practices of regulations of the Ministry of Health on ensuring food safety to prevent Covid-19, such as wearing masks when working, keeping contact distance with food, washing hands, disinfecting correctly, and do not gather in large numbers in production facilities have reached a high rate of over 90 %. All customers know about the 5K regulations. It is necessary to strengthen the propaganda to ensure food safety to prevent the Covid-19 pandemic so that the subjects can better understand the regulations of the Government, the Ministry of Health, Departments on Ensuring Food safety and prevention of the Covid-19 pandemic, and good practices of the above regulations.

**Keywords:** Covid-19, food safety, 5K, practical knowledge.

## 1. INTRODUCTION

Food safety is a top concern in most countries worldwide, it affects human health and socio-economic life. Currently, public catering services are expanding that rapidly increase foodservice establishments such as restaurants, hotels, etc. Unguaranteed food safety at business establishments is one of the potential risks causing food poisoning and food-borne diseases [1-2]. There are many causes of food poisoning, one of which is due to poor knowledge, attitude, and practice of food safety of establishment owners and processors.

At the end of 2019, the world in general and Vietnam, in particular, faced the Covid-19 pandemic, which has now spread to more than 210 countries and territories, with a highly complicated situation [3]. For ensuring food safety in the new situation under the direction of the Prime Minister, foodservice businesses need to fully and seriously comply with the requirements on food safety conditions. At the same time, foodservice businesses should promote propaganda against the Covid-19 pandemic, further strengthen producers, traders, and processors' roles and responsibilities and raise consumers' awareness [4]. Son La city currently has more than 50 restaurants and hotels serving 50 meals or more, over 30 collective kitchens serving 200 meals or more. However, there have been no published studies on knowledge and practice of food safety in preventing Covid-19. Therefore, we have conducted a study to evaluate the knowledge and practice of food safety of establishment owners, food processors, and customers to prevent the Covid-19 pandemic at foodservice establishments in Son La city, Vietnam, in 2020.

\*Corresponding author: Tel:0389 987 259

Email: ngantt253@gmail.com

## 2. MATERIALS AND METHODS

### 2.1. Research objects

The direct food processors, waiters, owners of catering restaurants, and customers were selected for this study.

### 2.2. Research method

#### 2.2.1. Research design

Descriptive epidemiological study with a cross-sectional survey used by direct interviews with processors, establishment owners, and customers at foodservice establishments to prevent the Covid-19 pandemic in Son La city in 2020.

#### 2.2.2. Sampling method and sample size

- The sample size for interviewing establishment owners, including all owners of foodservice businesses selected for the study, was 61 people.

- Sample size of interviews with processors and customers:  $n = Z_{(1-\alpha/2)}^2 \frac{p \cdot (1-p)}{d^2}$

In which:  $z$ : confident interval of 95 %,  $Z_{(1-\alpha/2)} = 1.96$ .

$d$ : tolerance

$p$  = percentage of people with correct awareness of food safety to prevent Covid-19

\* The subject is the person who directly prepares food at the restaurant: select  $p = 0.75$  through a pre-interview,  $d = 0.05$ ,  $n = 288$  people. We actually interviewed 288 people.

\* The object is the customers: select  $p = 0.7$  through a pre-interview,  $d = 0.06$ ,  $n = 224$ . We actually interviewed 233 people.

\* Sampling method

- Selection of the owner of a foodservice business: all the restaurant owners were selected to evaluate food safety conditions.

- Selection of staff directly processing food, waiters of catering restaurants: each catering restaurant has about four to five people to process and serve. Select the total number of people to process and serve at the restaurants that met the criteria.

- Select customers: select all customers who come to eat at restaurants from 7 : 00 am. to 9 : 30 pm. on weekdays who agree to participate in the study.

#### 2.2.3. Research variables and indicators

- Knowledge of establishment owners about regulations to ensure food safety in the prevention of Covid-19.

- Percentage of establishment owners participating in training to ensure food safety in the prevention of Covid-19.

- Knowledge and practice of food processing business owners on ensuring food safety in the prevention of Covid-19 pandemic.

- Customers have heard information about food safety in the prevention of Covid-19 pandemic.

- Customer knowledge about requirements for sellers to prevent Covid-19.

- Customers know about the 5K message of the Ministry of Health and name the message precisely.

#### 2.2.4. Methods of information collection

- Interviewing the knowledge and practices of food safety of processors using questionnaires according to Decision 37/QĐ-ATTP of Food Safety Department dated 02/02/2015; Official Dispatch 965/ATTP-NDTT dated 23/04/2020, of the Vietnam Food Administration on guiding food safety in the prevention of COVID-19 pandemic for foodservice establishments.

- Interviewing knowledge and practice of the owner on food safety using pre-designed questionnaires, conducting face-to-face interviews.

- Interviewing customers on food safety knowledge and practices using pre-designed questionnaires to gather information on food safety knowledge and practices.

2.2.5. *Research techniques*

Direct interview on food safety knowledge and practice of selected groups of subjects was performed using pre-designed questionnaires.

2.2.6. *Evaluation Criteria*

We used a set of questions to assess food safety knowledge for establishment owners and people directly processing and trading prepackaged foods that require special storage conditions under the management of the Ministry of Health and the answers to this questionnaire. The criteria were evaluated according to Decree No. 155/2018/ND-CP of the Government, Decision No. 37/QD-ATTP of Vietnam Food Administration, and Archives No. 965/ATTP-NDTT on guiding to ensure food safety in the prevention of COVID-19 pandemic for foodservice and street food business establishments.

2.2.7. *Data processing methods*

The raw data was cleaned before entering Epidata 3.1 software. Data analysis was done using SPSS statistical 20 software.

**3. RESULTS AND DISCUSSION**

The results in Table 1 show that 98.4 % have heard/read about food safety to prevent Covid-19; 80.3 % fully know the recommendations of the Ministry of Health to apply to avoid Covid-19 infection. 100 % of establishment owners know the necessary conditions at the processing area to prevent and control the Covid-19 pandemic and know the need to arrange distance between people eating and drinking at the restaurant. 96.7 % of establishment owners know the symptoms that need to stop working for the processor/server. The research results of author Pham Thi Chung also show that most subjects have correct knowledge about people having acquired diseases and symptoms should not directly contact food [5]. 75.4% of establishment owners fully know the requirements for customers to prevent Covid-19. This will help the establishment know what measures to ask consumers to take when coming to eat and drink at facilities, improve general disease prevention in the community, and contribute to preventing disease spread and outbreaks.

*Table 1. Knowledge of establishment owners on regulations to ensure food safety in the prevention of Covid-19 pandemic (n = 61)*

<i>Regulations to ensure food safety in the fight against Covid-19</i>	<i>Male (n = 24)</i>		<i>Female (n = 37)</i>		<i>Total (n = 61)</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>Know all the recommendations of the Ministry of Health to apply to avoid Covid-19 infection</i>	20	83.3	29	78.4	49	80.3
<i>Heard/read about food safety to prevent Covid-19</i>	24	100.0	36	97.3	60	98.4
<i>Know the requirements for the processor/server to perform during the working process</i>	19	79.2	34	91.9	53	86.9
<i>Know the symptoms that need to stop the processor/server from working</i>	24	100.0	35	94.6	59	96.7
<i>Know the necessary conditions at the processing area to prevent the Covid- 19 pandemic</i>	24	100.0	37	100.0	61	100.0
<i>Know how to arrange the distance between people eating and drinking to prevent Covid-19 pandemic</i>	24	100.0	37	100.0	61	100.0
<i>Know all the requirements for guests coming to eat to prevent Covid-19 pandemic</i>	21	87.5	25	67.6	46	75.4

The research results showed that 100 % of establishment owners were trained, participated in training to disseminate instructions on Covid-19 pandemic prevention documents. 98.4 % participated in the issuance and implementation of food hygiene and safety documents to prevent Covid-19, such as developing communication materials, documents, and regulations requiring implementation at the establishment.

**Table 2.** Percentage of establishment owners participating in food safety training in the prevention of Covid-19 (n = 61)

<b>Training</b>	<b>Male (n = 24)</b>		<b>Female (n = 37)</b>		<b>Total (n = 61)</b>	
	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>
<i>Received training in disseminating instructions on Covid-19 pandemic prevention documents</i>	24	100.0	37	100.0	61	100.0
<i>Presiding over/participating in food hygiene and safety checks against Covid-19</i>	15	62.5	28	75.7	43	70.5
<i>Participating in the issuance of documents on safe implementation of food hygiene and safety against Covid-19</i>	23	95.8	37	100.0	60	98.4

Research results showed that over 90 % knew they need to wear a mask when processing and in direct contact with food, use soap, sanitizer base to disinfect tools and hands. Most of the subjects knew that they needed to keep distance, not gather in large numbers at food processing and trading places; 89.6 % knew it was necessary to keep a distance between processing staff, waiters, and customers. Most facilities have arranged alternate shifts of employees and do not gather in large numbers in the facility. Temperature monitoring was an initial measure of pandemic control to detect people with fever when they come to work; this is a simple and easy measurement. 78.1 % of the subjects knew that they needed to have their body temperature checked before working. Health declaration is the provision of personal health information by people, especially information about the origin, residence, and destination history, to control and prevent the COVID-19 pandemic. In our study, 92.7 % knew it was necessary to make a medical declaration.

**Table 3.** Knowledge of establishment owners and food processors on ensuring food safety in the prevention of Covid-19 (n = 288)

<b>General knowledge</b>	<b>Male (n = 161)</b>		<b>Female (n = 127)</b>		<b>Total (n = 288)</b>	
	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>
<i>Keep the distance between food processors, waiters, and customers</i>	148	91.9	110	86.6	258	89.6
<i>If a waiter has a cough, fever, or difficulty breathing, he/she is forced to stop working</i>	112	69.6	95	74.8	207	71.9
<i>Check body temperature before working</i>	118	73.3	107	84.3	225	78.1
<i>Make a medical declaration</i>	147	91.3	120	94.5	267	92.7
<i>Wear a mask when handling and contacting food</i>	151	93.8	116	91.3	267	92.7
<i>Use soap, disinfectant solution to disinfect facilities, tools, hands</i>	153	95.0	113	89.0	266	92.4
<i>Practice distancing, not gathering at processing and business places</i>	153	95.0	115	90.6	268	93.1

The research results show that 100 % of subjects have heard information about the Covid-19 pandemic; 100 % practice wearing masks when working; 95.1 % keep contact distance, 87.5 % make a medical declaration; 88.5 % implement not to gather in large numbers of people in the establishment; 79.2 % wash hands, disinfect properly.

**Table 4.** Practice of food processing business on ensuring food safety in the prevention of Covid-19 (n = 288)

<i>Practices</i>	<i>Male (n = 161)</i>		<i>Female (n = 127)</i>		<i>Total (n = 288)</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>Trained in food safety knowledge</i>	119	73.9	81	63.8	200	69.4
<i>Comply with regulations when producing and processing</i>	88	54.7	50	39.4	138	47.9
<i>Hear information about the Covid-19 pandemic</i>	161	100.0	127	100.0	288	100.0
<i>Wear a mask when working</i>	161	100.0	127	100.0	288	100.0
<i>Keep contact distance</i>	155	96.3	119	93.7	274	95.1
<i>Wash hands and disinfect properly</i>	125	77.6	103	81.1	228	79.2
<i>Make a medical declaration</i>	142	88.2	110	86.6	252	87.5
<i>Do not gather in large numbers in the facility</i>	144	89.4	111	87.4	255	88.5

5K messages are measurements to prevent COVID-19 infection recommended by the World Health Organization to prevent the rapid spread of the COVID-19 pandemic. Right from the beginning of 2020, Vietnam has strongly implemented anti-pandemic measures, and 5K has been widely propagated in the mass media. 5K includes: Mask - Disinfection - Distance - Distractions - Medical declaration. Research results show that 100 % of customers know about 5K messages, of which 67.4 % fully and meet the requirements of the message.

**Table 5.** Percentage of customers who know about the 5K message of the Ministry of Health and name it exactly (n = 233)

<i>5K messages</i>		<i>Male (n = 114)</i>		<i>Female (n = 119)</i>		<i>Total (n = 233)</i>	
		<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>Know about the 5K messages</i>	<i>Yes</i>	114	100.0	119	100.0	233	100.0
	<i>No</i>	0	0.0	0	0.0	0	0.0
<i>Name exactly</i>	<i>Correct</i>	78	68.4	79	66.4	157	67.4
	<i>Incorrect</i>	36	31.6	40	33.6	76	32.6

The results show that 88 % of dining out customers care about their distance from people around, 88.8 % perform hand washing/disinfection. Research by author Cao Thi Hoa on the food safety status of many foodservice businesses in Hai Ba Trung district, Hanoi, shows that 42.8 % of processors fully comply with hygiene regulations (hand washing and disinfecting; 93.6 % fully complied with personal hygiene regulations; nails cut short, clean, not spitting, smoking) [6]. Research by author Do Nam Khanh on food safety knowledge and practices of foodservice business in Dong Da and Long Bien districts, Hanoi shows that about 50 % of study subjects in both districts have correct knowledge of the correct hand washing steps and carry out proper handwashing and disinfection procedures [7].

**Table 6.** Percentage of customers who care about distance and disinfecting when eating at foodservice establishments (n = 233)

Variables		Male (n = 114)		Female (n = 119)		Total (n = 233)	
		Number	%	Number	%	Number	%
<b>Pay attention to the distance with people around</b>	Yes	98	86.0	107	89.9	205	88.0
	No	16	14.0	12	10.1	28	12.0
<b>Perform hand washing/disinfection</b>	Yes	99	86.8	108	90.8	207	88.8
	No	15	13.2	11	9.2	26	11.2

The Ministry of Health has issued guidelines for wearing masks to prevent and control the COVID-19 pandemic, applicable to public places and places where people gather. Research results show that 100 % of customers wear masks regularly, and 43.8 % make medical declarations on the application.

**Table 7.** Percentage of customers with medical declaration and implementation wear a mask often (n = 233)

Variables		Male (n = 114)		Female (n = 119)		Total (n = 233)	
		Number	%	Number	%	Number	%
<b>Make a medical declaration</b>	Yes	50	43.9	52	43.7	102	43.8
	No	64	56.1	67	56.3	131	56.2
<b>Wear a mask often</b>	Yes	114	100.0	119	100.0	233	100.0
	No	0	0.0	0	0.0	0	0.0

#### 4. CONCLUSION

The knowledge of the establishment owners about the regulations to ensure food safety in the prevention of Covid-19 was relatively high: over 75 % of them had knowledge of the regulations on food safety in the prevention of the Covid-19 pandemic, and 100 % have been trained in general document guidance on Covid-19 pandemic prevention. Knowledge and practice of food processing business people on ensuring food safety to prevent Covid-19 pandemic reached a high rate of over 90 %, especially the regulations of the Ministry of Health such as wearing a mask when working; washing hands, disinfecting properly, making medical declarations and not doing gather in large numbers in the facilities. Target customers: 100 % of customers knew about 5K messages, and 100 % wore a mask regularly. It is necessary to further strengthen the propaganda to ensure food safety in order to prevent the Covid-19 pandemic so that 100 % of establishment owners, traders, processors, service staff, and customers fully understand the

regulations of the Ministry of Health on ensuring food safety to prevent Covid-19 and well practice the above regulations.

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## Kiến thức, thực hành về an toàn thực phẩm của chủ cơ sở, người chế biến thực phẩm, khách hàng dự phòng dịch Covid-19 tại các cơ sở kinh doanh dịch vụ ăn uống trên địa bàn Thành phố Sơn La năm 2020

Nguyễn Thị Thanh Nga<sup>1</sup>, Nguyễn Hùng Long<sup>2</sup>, Ninh Thị Nhung<sup>3</sup>, Phạm Thị Kiều Chinh<sup>3</sup>

<sup>1</sup>Đại học Tây Bắc, Sơn La, Việt Nam

<sup>2</sup>Cục An toàn thực phẩm, Hà Nội, Việt Nam

<sup>3</sup>Bộ môn Dinh dưỡng & An toàn thực phẩm, Đại học Y Dược Thái Bình, Thái Bình, Việt Nam

### Tóm tắt

Tình hình dịch Covid-19 hiện nay vẫn còn diễn biến phức tạp, việc bảo đảm an toàn thực phẩm (ATTP) đối với các cơ sở kinh doanh dịch vụ ăn uống là hết sức cần thiết. Nghiên cứu đánh giá kiến thức, thực hành về ATTP của chủ cơ sở, người chế biến thực phẩm, khách hàng dự phòng dịch Covid-19 tại các cơ sở kinh doanh dịch vụ ăn uống trên địa bàn Thành phố Sơn La năm 2020 cho thấy kết quả đạt khá cao: trên 75 % chủ cơ sở có kiến thức về các quy định đảm bảo ATTP trong dự phòng dịch Covid-19 và 100 % được tập huấn phổ biến hướng dẫn văn bản phòng dịch. Người chế biến thực phẩm đã có hiểu biết và thực hành các quy định về đảm bảo ATTP dự phòng dịch Covid-19 đạt tỷ lệ cao trên 90 %, đặc biệt là các quy định của Bộ Y tế như đeo khẩu trang khi làm việc, giữ khoảng cách khi tiếp xúc; rửa tay, khử khuẩn đúng kỹ thuật, và không tụ tập đông người trong cơ sở sản xuất. 100 % khách hàng biết về thông điệp 5K. Cần tăng cường hơn nữa công tác tuyên truyền đảm bảo an toàn thực phẩm dự phòng dịch Covid-19 để các đối tượng hiểu rõ hơn nữa về các quy định của Chính phủ, Bộ Y tế, các Sở, Ngành về đảm bảo ATTP phòng chống Covid-19 và thực hành tốt các quy định nêu trên.

**Từ khóa:** Covid-19, an toàn thực phẩm, 5K, kiến thức thực hành.