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# FOREIGN WORKERS' FOOD HANDLING KNOWLEDGE IN SHAH ALAM'S RESTAURANT

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## ABSTRACT

This cross sectional study aimed to explore the pattern of foreign workers demographic and assess their level of food handling knowledge in the restaurants. It was done in Shah Alam restaurants with 350 respondents participated. 14 restaurants were included in the data collection. Most of the respondents working in restaurants are from Indonesia and India while there also workers from Laos, Myanmar, Thailand, Vietnam, Nepal, Pakistan and Yemen. Majority of the respondents agreed with mean score of 4.00 and above based on 9 questions. The lowest mean score were derived from the danger zone temperature of between 5 $^{o}$C-60$^{o}$C, which indicate that the workers are not familiar with the safe food handling temperature. Most foreign workers had informal on the job training. However, a collective and structured training by local authority should be provided. The training should include modules and demo video in each foreign workers familiar language to ensure better understanding.

**Keywords:** foreign worker; food handling, knowledge; food borne illness; restaurant; Shah Alam.

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## 1. INTRODUCTION

In Malaysia, foreign workers are only allowed to work in 5 formal sectors which include construction, manufacturing, services, agricultural, plantation and maid service that requires low or unskilled jobs [9]. The fifteen approved source countries for foreign workers include Indonesia, Nepal, Myanmar, India, Vietnam, Philippines, Pakistan, Thailand, Bangladesh, Cambodia, Sri Lanka, Laos, China, Turkmenistan and Kazakhstan [10]. Even though, according to the foreign worker policy, foreign workers are not allowed to work as the front-line workers and at fast food restaurants [9], they are frequently seen to serve or become the front liners in Malaysia restaurant [5]. It was found that foreign workers possessed more skills and experiences compare to local workers [8], thus this help to create high demand for manpower in the foodservice industry resulting in increase of employment of foreign workers from 9.1% in 2010 to 13.7% in 2015 [9].

Food safety knowledge is important to prevent food borne illness. In [4] mentioned that prevention of food borne illnesses is one of the primary responsibilities of the foodservice industry. In [11] stated that good levels of knowledge towards food safety among the food handlers and the effective practices of such knowledge in food handling were imperative in ensuring the safe production of food in any catering operations. To ensure the safety of food prepared and served to customers, the responsibility falls to the manager. According to studies done previously by [1, 20], they found out that awareness for food safety knowledge is directly proportional to age and practice, female adults have higher score than male adults while younger sample show higher awareness for additional food safety knowledge.

Many cases of food borne illnesses to foods prepared in retail foodservice operations have been linked and caused by human error at some point in the food chain. By identifying the employees' knowledge, attitudes and practices it will essentially assure food safety and prevent the occurrence of food borne illnesses which is a public health problem [13]. In [7, 19, 23] also mentioned that although there was a positive association among the level of knowledge, attitudes and practices of the respondents. Nevertheless via the observation, it can be seen that many of them did not always apply the knowledge they have learned when in actual practices of handling foods.

## 2. METHODOLOGY

Quantitative approach through survey questionnaire was used to comprehensively investigate the foreign workers' food handling knowledge in Shah Alam restaurants. In this study, the data were collected using self-administered and self-completed questionnaires that were distributed to foreign workers working in the restaurants in Shah Alam.

Systematic sampling was used in this research, which offer the advantages of ease and quickness in developing the sample [18]. Due to the unavailability in estimating the population of these workers, the rule of thumbs proposed by [16] were adopted.

The questionnaire was constructed in three languages, which are Malay, English and Bengali. Through the researcher observation and inquiries made with the restaurant's owners, the foreign workers are only able to comprehend languages such as Tamil and Bengali. With the help of Majlis Bandaraya Shah Alam Health Inspectors, the surveys were distributed to the manager or supervisor at the restaurants for them to distribute to all foreign workers at their respective restaurants. Some of the survey forms were collected on the same day while the others were collected a week after they were completed.

The respondents rate their level of frequency or their level of agreement with various questions (items) according to a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire consists of 2 parts, demographic profiles and the foreign workers' food handling knowledge respectively.

## 3. RESULTS AND DISCUSSION

### 3.1. Respondents' Response Rate

A total of 400 questionnaires were distributed with 370 (92.5%) successfully collected and 350 (87.5%) were found useable and coded for further analysis. About 20 non-usable responses were excluded due to incompletion of the questionnaire, which are important to the study. Table 1 reports the number of participating restaurants and overall response rates in this study. The questionnaires are well distributed and ranging between 20 to 45 respondents across all restaurants.

**Table 1.** Total of participating restaurant and overall response rates (n = 350)

| Restaurants | Questionnaires Distributed | Respondents | % of Respondents | % Total Respondents |
|---|---|---|---|---|
| Restoran Hakim Lama (Section 7) | 40 | 40 | 100.0 | 10.8 |
| Restoran Hakim (Section 7) | 40 | 40 | 100.0 | 10.8 |
| Pak Li Kopitiam (Section 7) | 25 | 20 | 80.0 | 5.4 |
| Pak Li Kopitian (Section 13) | 25 | 18 | 72.0 | 4.9 |
| Pak Li Kopitiam (Section 18) | 25 | 20 | 80.0 | 5.4 |
| Pak Li Kopitiam (Section 33) | 25 | 20 | 80.0 | 5.4 |
| Restoran Khulafa (Section 7) | 30 | 28 | 93.3 | 7.6 |
| Restoran Khulafa (Section 7) | 20 | 15 | 75.0 | 4.1 |
| Restoran Khulafa (Section 7) | 30 | 30 | 100.0 | 8.1 |
| Restoran Khulafa (Section 14) | 30 | 30 | 100.0 | 8.1 |
| Restoran Khulafa (Section 20) | 30 | 30 | 100.0 | 8.1 |
| Al Rawsha Restaurant (Section 7) | 30 | 30 | 100.0 | 8.1 |
| Al Rawsha Restaurant (i-City) | 30 | 30 | 100.0 | 8.1 |
| Wong Solo (Section 7) | 20 | 20 | 100.0 | 5.4 |
| Total | 400 | 370 | 92.5 | 100.0 |

### 3.2. Demographic Analysis

From the demographic data, it was found that the respondents fell into different categories of age, gender, food handling training, typhoid injection, country of origin, education level and working duration. The following series of figure illustrates the overall characteristics of the respondent demographic. Table 2 shows the summary of demographic information of each respondents based on the frequency and the percentage for all of the items.

Among the 350 respondents, majority of the respondents are between the age of 23 to 27 years old. Additionally, 78% of the respondents are male and 22% of them are female. Out of 350 respondents, 96.6% of the respondents attended the food handling training while the other 3.4% have not attended the training.

Fortunately, 96 % of the respondents have their typhoid injection. Although typhoid injection

is a compulsory under Food Law and Regulations, 4% have not had their typhoid injection at the point when data were collected. From the 350 data collected, most of the respondents working at the restaurants came from Indonesia and India with 44% and 36% respectively. While the rest, 3.4% of them are from Bangladesh, 0.6% from China, 0.9% from Laos, 1.7 % from Myanmar, 1.7% from Nepal, 0.9% from Pakistan, 3.4% from Thailand, 1.7% from Vietnam and 5.7% from Yemen.

Among the 350 respondents, 5.1% of the respondents did not have any formal education, 16.9% have primary education, 71.1% have secondary education, 4.6% have diploma and 2.3% have degree. To add, 6.3% of the respondents have been working in restaurants for 1-4 months, 3.1% for 5-8 months, 8.6% for 9-12 months, 82% for 1 year and above and this is the biggest group of workers with the most experience. Their knowledge in handling food are later discussed.

**Table 2.** Summary of demographic profiles of the respondents (n = 350)

| Item | Category | Frequency | Percent (%) |
|---|---|---|---|
| Age | 18 – 22 years old | 57 | 16.3 |
| | 23 – 27 years old | 135 | 38.6 |
| | 28 – 32 years old | 62 | 17.7 |
| | 33 – 37 years old | 43 | 12.3 |
| | 38 – 42 years old | 18 | 5.1 |
| | 43 years old and above | 35 | 10.0 |
| Gender | Male | 273 | 78.0 |
| | Female | 77 | 22.0 |
| SLPM | Yes | 338 | 96.6 |
| (Food Handling Training) | No | 12 | 3.4 |
| Typhoid Injection | Yes | 336 | 96.0 |
| | No | 14 | 4.0 |
| Country of Origin | Bangladesh | 12 | 3.4 |
| | China | 2 | 0.6 |
| | India | 126 | 36.0 |

| | | | |
|---|---|---|---|
| | Indonesia | 154 | 44.0 |
| | Laos | 3 | 0.9 |
| | Myanmar | 6 | 1.7 |
| | Nepal | 6 | 1.7 |
| | Pakistan | 3 | 0.9 |
| | Thailand | 12 | 3.4 |
| | Vietnam | 6 | 1.7 |
| | Yemen | 20 | 5.7 |
| Education Level | No formal education | 18 | 5.1 |
| | Primary education | 59 | 16.9 |
| | Secondary education | 249 | 71.1 |
| | Diploma | 16 | 4.6 |
| | Degree | 8 | 2.3 |
| Working Duration | 1 – 4 months | 22 | 6.3 |
| | 5 – 8 months | 11 | 3.1 |
| | 9 – 12 months | 30 | 8.6 |
| | 1 year and above | 287 | 82.0 |

### 3.3. Descriptive Analysis of Foreign Workers' Food Handling Knowledge

There were a total of 11 questions to access the foreign workers' food handling knowledge. Descriptive statistic is looking at the mean score that were derived from the assessment of the data. Eleven items has been used to measure the food handling knowledge. The results are derived from 350 respondents and stated in Table 3.

The result in Table 3 shows that the highest mean score is on washing hands properly reduce risk of contamination (M = 4.69, SD = 0.606). In contrast, the lowest means score is on correct cleaning procedures of equipment increase risk of infection transmission (M = 2.53, SD = 1.154). The mean for all items are varied from 4.69 to 2.53. Thus, the foreign workers knows that the hand washing is important in any food preparation.

In addition, the table has shown the mean for hands must be washed often (M = 4.30, SD = 0.586), touching hair should be avoided after washing hands (M = 4.19, SD = 0.516) and

cross contamination is the transfer of harmful microorganisms to food from non food contact surfaces (M = 3.73, SD = 0.842). Moreover, use of gloves reduces the risk of transmitting infection to consumers (M = 4.30, SD = 0.478), food borne illnesses are diseases that transmitted to people by food (M = 4.00, SD = 0.720), time is important factors to control growth of bacteria (M = 4.11, SD = 0.586), temperature is important factors to control growth of bacteria (M = 4.21, SD = 0.576), cooked foods that keep in room temperature for more than 4 hours will the food to become spoilt (M = 4.20, SD = 0.515) and danger zone temperature for foods is 5ºC to 60ºC (M = 3.65, SD = 0.888).

Looking at the general mean score, many are above 4.00 which indicated that the foreign workers agree with most of the statements to represent their knowledge on the subject being questioned. Except for question number 6 which indicated their understanding that equipment need to be cleaned to reduce infection. The other question which asked for the danger temperature in food preparation between 5°C to 60°C generate a mean score of 3.65 with slightly agree. Generally from the mean score, it is safe to assume that the foreign workers have some knowledge on safe food handling. This is no surprise because majority of the respondents have had working experience in food preparation for more than one year. Thus, they have had on the job training while working at their respective restaurants. The respondents' score were summarized as follow.

**Table 3.** Mean and standard deviation of foreign workers' food handling knowledge (n = 350)

| No. | Items | Mean | Standard Deviation |
|---|---|---|---|
| 1 | Hands must be washed often. | 4.30 | .586 |
| 2 | Washing hands properly reduce risk of contamination. | 4.69 | .606 |
| 3 | Touching hair should be avoided after washing hands. | 4.19 | .516 |
| 4 | Cross contamination is the transfer of harmful microorganisms to food from non food contact surfaces. | 3.73 | .842 |
| 5 | Use of gloves reduces the risk of transmitting infection to consumers. | 4.30 | .478 |
| 6 | Correct cleaning procedures of equipment increase risk of | 2.53 | 1.154 |

| | | | |
|---|---|---|---|
| | infection transmission. | | |
| 7 | Food borne illnesses are diseases that transmitted to people by food. | 4.00 | .720 |
| 8 | Time is important factors to control growth of bacteria. | 4.11 | .586 |
| 9 | Temperature is important factors to control growth of bacteria. | 4.21 | .567 |
| 10 | Cooked foods that keep in room temperature for more than 4 hours will the food to become spoilt. | 4.20 | .515 |
| 11 | Danger zone temperature for foods is 5ºC to 60ºC. | 3.65 | .888 |

Scale: 1 = Strongly disagree, 2 = Disagree 3 = Slightly agree, 4 = Agree, 5 = Strongly agree

However, according to [12], knowledge only foresee 4% of intention and 1.4% of behaviours. Therefore, by providing knowledge alone does not usually result in safe food handling [15, 17]. Fortunately, according to [22], food handling knowledge can easily be improved through repeated exposure and practices, for instance practices related to personal hygiene, except it is hard to improve knowledge which involves technical procedures, like monitoring time and temperature and appropriate sanitization measures. Thus, justified the knowledge on danger zone temperature which score slightly agree.

Hands-on training materials should be inclined towards food handler's view since there were studies that pointed out that knowledge alone is not sufficient to enhance the food handlers' attitude and practices [3, 21]. Sanitation practices, prevention of cross contamination, correct sanitation procedures can easily be improved if continuous and specific-goal oriented training being provided to these food handlers. Therefore, the longer the foreign workers have had experience on the job, the better their knowledge will become due to the training.

Looking back at the knowledge on danger zone temperature, in [2] stated that the unavailability of thermometer is the commonly recognized constraint. It were supported by [15, 22] who mentioned that there is no improvement in thermometer usage as it is not usually available for the workers to used. Through personal observation and input from health inspector, thermometer were seldom used by the restaurants in ensuring their food were kept and handled according to the temperature of the danger zone.

Even though knowledge is not enough to adjust these workers' food handling practices, however with the support and close supervision from their superiors, it helps the changes easier [6, 14-15]. Close supervision by the restaurant owners and superior manager were important in these kind of restaurants due to the limited command in language spoken among the foreign workers.

In [24] also suggested that by having proactive and supportive superiors, it help in assisting to ease the workers' transition from the acquired knowledge into safe food handling practices.

## 4. CONCLUSION

In conclusion, with proper training, knowledge on food handling could be improved among the foreign workers. Even though, to date, some informal training had been delivered through the restaurant management to their workers, some formal training should be provided which integrates basic hygiene and food safety programs conforming to national regulations. The training provided should be more practical (i.e. demonstrations) rather than theoretical and the provision of guidance and information in the form of manuals, short booklets or videos in each respective languages that most foreign workers are familiar should be encouraged. By having proper knowledge, it could lead to good attitudes and even good practices.

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