

# Knowledge and practices of occupational safety among foodservice employees in Kota Kinabalu, Sabah

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**ABSTRACT** This study aims to identify the level of knowledge and practices toward occupational safety among foodservice employees in the city area Kota Kinabalu. A total of 158 respondents participated in the study. Questionnaires were used to collect data. Data were analysed using descriptive statistics and the Spearman correlation test. Respondents demonstrated a moderate to good level of knowledge (58.9%), with the highest scores for knowledge regarding basic knowledge (85.4%) and the lowest scores concerning on type of fire class (12.0%). Respondents achieved moderate-good level of practices (39.2%), with the highest mean score for wearing closed toe shoes ( $4.43 \pm 0.93$ ) and the lowest was the wearing of safety gloves when cutting meat ( $2.61 \pm 1.42$ ). A weak positive correlation ( $r=0.240$ ,  $p=0.002$ ) was observed between knowledge and practices, suggesting that workers with higher knowledge levels are marginally more likely to follow good practices. However, knowledge alone does not account for most of the variation in practices. In conclusion, the study shows that good knowledge and practices are important for occupational safety, and knowledge is a contributing factor to good practices. Still, its impact is limited, as indicated by the weak strength of the correlation. This suggests that while improving knowledge through training or education may enhance practices, additional factors such as attitude, motivation, or external conditions may also play significant roles. These findings highlight the need for targeted training to address specific weaknesses and improve workplace safety.

**KEYWORDS:** Knowledge; Practices; Occupational safety; Foodservice; Employees

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## INTRODUCTION

Recent studies highlight the growing importance of occupational health in the food and beverage sector, particularly within the hotel industry in places like Kota Kinabalu, Malaysia. With its substantial number of foodservice employees, maintaining health and safety standards in hotel restaurants is critical to prevent workplace injuries and ensure employee well-being (Chan & Tay, 2023). In recent years, there has been an increased focus on how these sectors adapt to new health and safety protocols, especially regarding food hygiene, sanitation, and safety measures to ensure a safe environment for both workers and customers as the tourism and hotel sectors in Sabah grow, particularly in cities such as Kota Kinabalu, enhancing occupational health practices is a key to supporting both the workforce's safety and the city's sustainable tourism development (Sabah Tourism Board, 2016; Lai, 2021). Additionally, the growth of tourism and hospitality in Sabah has heightened the focus on food hygiene, sanitation, and safety.

Bhojani *et al.* (2022) emphasize that extensive training programs centred on occupational hazards and well-being facilitate workers' effective adaptation to changing workplace dangers. This study highlights the necessity for a systems-thinking approach to occupational safety, particularly in situations influenced by technological and organizational changes. Personal hygiene, manual handling, and stress management are also vital components of OSH in the hospitality sector, as they help reduce the likelihood of work-related injuries and improve overall health and safety. Research further suggests that when workers are equipped with the proper knowledge and skills, they are more likely to follow safe work practices, thereby enhancing safety outcomes across the industry (Neal *et*

*al.*, 2000; OSHA, 2022). Occupational safety and health practices refer to the measures taken by employees to prevent injuries and accidents that may occur in the workplace. The nature of hotel restaurant work, which is easily exposed to hazards, can have adverse effects on the safety and health of workers. Therefore, hotel restaurant workers, whether in the kitchen or as waitstaff, need to perform their duties by following the established occupational safety and health practices. (Gleeson, 2012).

Recent studies emphasize the critical relationship between knowledge and occupational safety practices, particularly in high-risk industries like foodservice. Research shows that workers who are well-informed about safety protocols, such as hygiene practices, proper use of personal protective equipment (PPE), and fire safety, are more likely to follow these practices consistently, thereby reducing workplace hazards. For instance, a study by Sari *et al.* (2021) demonstrated that foodservice workers with higher levels of safety knowledge were more likely to adhere to safety measures, including proper food handling and the use of PPE. However, gaps in knowledge can still exist despite training, as some workers may not fully apply their knowledge due to factors such as attitudes or insufficient supervision. Therefore, this study aims to determine level of knowledge and practices of occupational safety among foodservice employees in Kota Kinabalu as well as to identify the relationship between the level of knowledge and practices of occupational safety among foodservice employees in Kota Kinabalu.

## METHODOLOGY

### Determination of Location and Participant

Kota Kinabalu was selected as the study site, encompassing 18 four- and five-star hotels. The respondents of this study consist of kitchen staff and service area workers. Cluster sampling, based on Krejcie and Morgan (1970), was used to select 232 hotel workers as respondents for this study.

### Determination of Method and Data Analysis

To analyze the data collected from the questionnaires, this study employed a quantitative survey to assess the knowledge and practices of occupational safety among hotel restaurant workers in Kota Kinabalu. The Statistical Package for the Social Sciences (SPSS) version 22.0 was used for data analysis. Workers' knowledge of occupational safety and health practices was assessed using descriptive statistics, specifically a frequency test. Analysis of workers' practices in occupational safety and health according to the Likert analysis scale scoring system (Masyita *et al.*, 2017) The Spearman correlation test is used to identify the relationship between the level of knowledge, attitudes, and practices of workers in occupational safety and health (Wilson, 2009).

This quantitative study employed a survey to examine the levels of knowledge, and practices of occupational safety among hotel restaurant workers in the city of Kota Kinabalu. Cluster sampling was used in this study. The city of Kota Kinabalu was chosen as the study location there are 18 four and five-star hotels. The respondents of this study consist of kitchen staff and service area workers, Using the Krejcie & Morgan (1970) formula, a total of 232 hotel workers were selected as respondents for this study. The number of respondents involved in this study was 158 out of 232 hotel restaurant workers (68.1%). The questionnaire is used to identify the level of knowledge and practices. To analyze the data collected from the questionnaire forms, the Statistical Package for the Social Sciences (SPSS) version 22.0 was used for data analysis. A descriptive test, namely a frequency test, is used to study the level of knowledge of workers regarding occupational safety and health practices. Analysis of workers' practices in occupational safety and health according to the Likert scale scoring system.

The Spearman correlation test is used to identify the relationship between the level of knowledge, attitudes, and practices of workers in occupational safety and health.

## RESULT AND DISCUSSION

The number of respondents involved in this study was 158 out of 232 hotel restaurant workers (68.1%).

### Level of Occupational Safety and Health Knowledge

The level of knowledge about basic knowledge of occupational safety, the use of Personal Protective Equipment (PPE), manual handling, and fire safety. A total of 15 questions were provided for the respondents, basic knowledge of occupational safety, manual handling, PPE, chemicals, and fire safety, and the outcome is shown in Table 1.

**Table 1.** Level of occupational safety and health knowledge.

No.	Statement	F (n) (%)	
		Correct	Incorrect
<b>Total number of respondents (n=158).</b>			
<b>Basic Knowledge</b>			
1.	Chemistry, biology, and the application of ergonomic principles can cause injuries and accidents in the workplace.	125 (79.1)	33 (20.9)
2.	Identifying risks and hazards in the workplace is the best way to prevent workers from job-related injuries	135 (85.4)	23 (14.6)
<b>Manual Handling</b>			
3.	Ergonomics is the interaction between humans, equipment, and the environment.	88 (55.7)	70 (44.3)
4.	Pushing, lifting, and carrying are manual handling activities	116 (73.4)	42 (26.6)
5.	The appropriate height for holding a heavy object manually is at waist height.	134 (84.8)	24 (15.2)
6.	The back is the part of the body most at risk of injury when lifting heavy loads	94 (59.5)	64 (40.5)
7.	Both feet should NOT be apart when lifting objects	102 (64.6)	56 (35.4)
<b>Personal Protective Equipment (PPE)</b>			
8.	Gloves are an example of Personal Protective Equipment (PPE).	76 (48.1)	82 (51.9)
9.	Rubber gloves should be worn when working with chemicals.	124 (78.5)	34 (21.5)
10.	The appropriate shoes are closed shoes, shoes with thick soles, and shoes that have good grip	121 (76.6)	37 (23.4)
<b>Basic Knowledge About Chemistry</b>			
11.	The way to treat skin burned by chemicals is to run cold water over the entire burned area for at least 20 minutes.	82 (51.9)	76 (48.1)
<b>Fire Safety</b>			
12.	Class A fires are caused by wood, paper, and cloth materials	38 (24.1)	120 (75.9)
13.	Cooking materials such as cooking oil or fat cause class E fires.	19 (12.0)	139 (88.0)
14.	The correct way to use a fire extinguisher is to pull, Aim, Squeeze, and Sweep.	84 (53.2)	74 (46.8)
15.	The colour code for dry powder fire extinguishers is blue	69 (43.7)	89 (56.3)

From Table 1, it can be seen that respondents demonstrated the highest level of knowledge in identifying risks and hazards in the workplace as the best way to prevent occupational injuries, with

135 respondents (85.4%) answering correctly. This may be attributed to the majority of respondents having undergone job training and being exposed to the basic knowledge required in the job, as well as the supervisor being responsible for providing information about risks and hazards in the workplace (Dodge, 2012). The lowest level of knowledge was observed in fire safety, with only 19 respondents (12.0%) correctly identifying the materials that cause Class E fires, while the majority, 139 respondents (88.0%), answered incorrectly. A study by Rahman *et al.* (2021) emphasizes the importance of comprehensive fire safety training for employees in the hospitality industry. The study found that continuous education, including regular fire drills and specific training on fire safety protocols, significantly improved workers' understanding of fire risks and safety equipment. It is suggested that employers integrate practical sessions to enhance the retention of fire safety knowledge among workers, mainly focusing on the identification of fire classes and appropriate responses. This shows that most hotel restaurant workers can understand occupational safety and health and identify risks that could threaten the safety and health of workers. Therefore, the employer is responsible for enhancing the employees' level of knowledge by organizing fire safety courses for employees to raise awareness among the workers.

### Occupational Safety and Health Practices

Respondents' practices were identified by the frequency with which they performed tasks according to standard operating procedures (SOPs), such as using personal protective equipment (PPE), proper manual handling, being knowledgeable and skilled in fire safety, correct handling of chemicals, maintaining personal hygiene, and practices to reduce work-related stress. Occupational safety and health practices among respondents by category have been shown in Table 2. It can be seen that for the use of PPE, wearing closed toes shoes recorded the highest mean value, which is  $4.43 \pm 0.93$ . A total of 102 respondents, or 64.6%, always wear closed shoes while working. This is due to the hazardous nature of work in restaurants, which requires workers to wear closed shoes to prevent their feet from being exposed to heavy, sharp, or hot materials. (Edwards, 2017). Regarding the use of gloves when cutting meat, it was found that most respondents never wore safety gloves when cutting with a sharp knife, namely 55 respondents or 34.8%. Only 19 respondents or 12.0%, always used safety gloves when cutting meat. This study found that workers do not use PPE due to negligence, their attitude of not realizing the importance of using PPE, and also discomfort when using PPE.

Negligence among workers, often due to workload pressures, contributes to inconsistent use of safety gloves while working. Furthermore, they feel uncomfortable because the gloves do not fit their size or become hot after wearing them (Tetemke *et al.*, 2014). Kaur & Singh (2022) found that training programs on PPE usage significantly enhance safety compliance among workers. The study highlighted the need for frequent demonstrations and reinforcement of the importance of PPE use to ensure compliance and minimize workplace injuries. Given that PPE is a vital component of health and safety in restaurant settings, integrating these practices into daily routines is crucial. Overall, the study findings indicate that respondents have the best practices in wearing appropriate footwear while working, specifically closed shoes for comfort and to avoid injuries, with the highest mean value of  $4.43 \pm 0.93$ . However, it was found that workers have low practices regarding the use of safety gloves while cutting meat with a sharp knife, with the lowest mean value of  $2.61 \pm 1.42$ . A study by Zubair & Hassan (2020) stresses that employers must take a more active role in promoting safety through regular safety audits and hazard assessments. The research found that periodic checks for compliance with safety standards and employee feedback sessions were effective in identifying weaknesses in safety practices, including fire safety.

**Table 2.** Occupational safety and health practices.

No.	Statement	F (n) (%)					Mean±standard deviation
		1	2	3	4	5	
<b>Personal Protective Equipment (PPE)</b>							
1.	I wear safety gloves when cutting meat with a sharp knife.	55 (34.8)	18 (11.4)	38 (24.1)	28 (17.7)	19 (12.0)	2.61±1.42
2.	I wear closed toes shoes while working for comfort and safety	4 (2.5)	2 (1.3)	18 (11.4)	32 (20.3)	102 (64.6)	4.43±0.93
<b>Manual Handling</b>							
3.	I lift and move items in large and heavy quantities using assistance equipment such as trolleys.	2 (1.3)	4 (2.5)	36 (22.8)	53 (33.5)	63 (39.9)	4.08±0.92
4.	I lift items without exceeding waist height.	3 (1.9)	9 (5.7)	60 (38.0)	56 (35.4)	30 (19.0)	3.64±0.92
5.	I ask colleagues to help lift heavy loads that exceed my capacity.	5 (3.2)	5 (3.2)	50 (31.6)	44 (27.8)	54 (34.2)	3.87±1.03
<b>Fire Safety</b>							
6.	I understand and clear about the fire evacuation plan and emergency exits at the workplace.	3 (1.9)	8 (5.1)	46 (29.1)	68 (43.0)	33 (20.9)	3.76±0.91
7.	I am proficient in using the fire extinguishers available at my workplace.	18 (11.4)	25 (15.8)	64 (40.5)	25 (15.8)	26 (16.5)	3.10±1.20
<b>Handling Chemicals</b>							
8.	I wear gloves when handling chemicals.	45 (28.5)	8 (5.1)	43 (27.2)	34 (21.5)	28 (17.7)	2.95±1.46
<b>Personal Hygiene</b>							
9.	I maintain personal hygiene by washing my hands after completing the work.	4 (2.5)	5 (3.2)	20 (12.7)	67 (42.4)	62 (39.2)	4.13±0.93
<b>Work Pressure</b>							
10.	I collaborate with colleagues to lighten the workload during peak hours.	6 (3.8)	8 (5.1)	43 (27.2)	47 (29.7)	54 (34.2)	3.85±1.07

Total number of respondents (n=158).

\*Rating scale: 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always.

### The Relationship between Knowledge Level and Practice

The relationship between knowledge level and occupational safety and health practices among respondents has been analyzed to determine the strength and direction of the relationship between the two variables. The relationship between knowledge level and occupational safety and health

practices among respondents has been studied using the Spearman Correlation Test as shown in Table 3.

**Table 3.** Correlation relationship between knowledge level and practice.

			Knowledge level	Practice
Spearman's rho	Level of knowledge	Correlation coefficient	1.000	.240
		Sig.(2-tailed)	.	.002**
		N	158	158

\*\*The correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient between the level of knowledge and occupational safety and health practices are  $r=0.240$  with a p-value of  $p=0.002$ . The test results showed a significant relationship between the level of knowledge and occupational safety and health practices, as the p-value (0.002) was less than 0.05. The correlation coefficient ( $r=0.240$ ) indicated a weak positive relationship between knowledge and practices, suggesting that an increase in knowledge may enhance safety and health practices (Wilson, 2009). This study shows that an increase in the level of knowledge will also enhance safety and health practices among the respondents. An increase in workers' knowledge levels influenced their behavior in performing tasks, positively impacting their safety and health (Neal *et al.*, 2000). Workers who know the practices that need to be followed can help them identify risks in the workplace and better understand the importance of adhering to regulations and following occupational safety and health practices. (Salminen, 2004). However, some studies indicate a high level of knowledge does not necessarily lead to good practices. This means that workers may have good knowledge but fail to apply it in their work practices. Job safety courses can enhance workers' knowledge and awareness but fail to change safety practices among workers (Lee *et al.*, 2017). The findings align with Jianu and Golet (2014), who observed a relationship between workers' knowledge levels and their occupational safety and health practices.

## CONCLUSION

In conclusion, foodservice employees in Kota Kinabalu demonstrate a moderate to good level of knowledge and practices regarding occupational safety, with strong awareness in fundamental safety knowledge but gaps in specific areas such as understanding fire classifications. The disparity in safety practices, particularly the lower adherence to using protective gear like safety gloves, highlights the need for targeted training and reinforcement of safety protocols. The positive weak correlation between knowledge and practices underscores the importance of fostering a positive safety culture to encourage adherence to best practices. Employers should prioritize continuous education, routine safety audits, and fostering a supportive work culture to ensure consistent and effective implementation of occupational safety measures, thereby reducing risks and promoting employee well-being by looking into a critical aspect that foodservice workers may overlook, such as consistent use of personal protective equipment (PPE).

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