



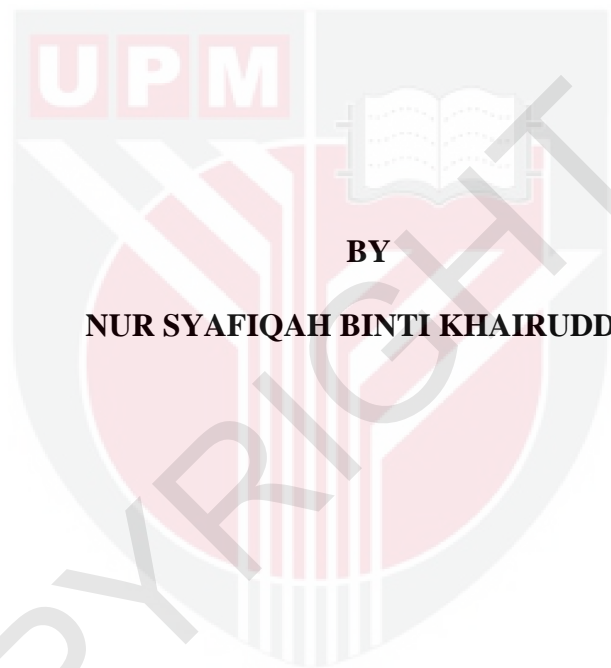
UNIVERSITI PUTRA MALAYSIA

***KNOWLEDGE, AWARENESS AND PRACTICE ON OCCUPATIONAL
SAFETY AND HEALTH AMONG OFFICE WORKERS IN PUBLIC
UNIVERSITIES IN MALAYSIA***

NUR SYAFIQAH BINTI KHAIRUDDIN

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SAFETY AND HEALTH AMONG OFFICE WORKERS IN PUBLIC
UNIVERSITIES IN MALAYSIA**



BY

NUR SYAFIQAH BINTI KHAIRUDDIN

**This thesis submitted in fulfilment of the requirement for the degree of Bachelor of
Science in Environmental and Occupational Health with Honours from the
Faculty of Medicine and Health Sciences, Universiti Putra Malaysia**



ACKNOWLEDGEMENTS

First and foremost, I expressed my sincere gratitude to Almighty Allah SWT for His blessings and merciful for giving me the strength and patience to complete my thesis entitled “Knowledge, Awareness, and Practice on Occupational Safety and Health among Office Workers in Public Universities in Malaysia”.

I would like to extend my sincere appreciation to my supervisor Assoc. Prof. Dr. Emilia Zainal Abidin for her continuous guidance and invaluable direction during this research study. Her support, direction, and constructive feedback have helped shape this thesis and are gratefully appreciated.

I wish to express my deepest appreciation to my mother, Mazarin binti Mohd Isa and father, Khairuddin bin Ishak for the endless support given to me in so many ways in this journey. Without their support, I would not be who I am today. Lastly, warmest thanks to all my friend for all the encouragement and helps given throughout this research study. I also would like to say thank you for all who, directly or indirectly involve in this research study.

ABSTRACT

KNOWLEDGE, AWARENESS AND PRACTICE ON OCCUPATIONAL SAFETY AND HEALTH AMONG OFFICE WORKERS IN PUBLIC UNIVERSITIES IN MALAYSIA

NUR SYAFIQAH BINTI KHAIRUDDIN

Introduction: According to the International Labour Organization (2021), almost 3 million of death happen annually due to occupational accidents and work-related illness. One of the assets that influences the company's value is the employees. Office workers are the supporting staffs for an organization which are responsible for performing administrative and support the daily operations at the workplace. They are play an important role to ensure the quality and productivity for the organization. However, many people may overlook the risk of occupational hazards that may be exposed by the office workers. The ignorance towards safety may put them at risk of occupational illnesses and occupational accident. Therefore, it is a vital to ensure their safety and health at the workplace and as it will consequently improve their job performance. **Objectives:** To investigate the level of knowledge, awareness, and practice (KAP) on occupational safety and health (OSH) and its associated factors. **Methodology:** This study is a cross sectional study was carried out among office workers from seven public universities in Malaysia. A sample size of 317 was randomly selected by using the simple random sampling. Data collection tool was a self-administered questionnaire which were provided in two languages (Malay and English). This questionnaire consists of sociodemographic and occupational background questions as well as there were 10-items assessed knowledge on OSH, 10-items assessed awareness on OSH, and 10-items assessed practice on OSH. This questionnaire's validity was gained by the content-validity and its reliability was validated by Cronbach's alpha. Data was analyzed by using the SPSS version 26. **Results and Discussion:** Total response rate for this study was 91.6%. In general, 71.0% of the respondents had good knowledge, 61.8% had good awareness and 51.1% of the respondents had good practice on OSH. Hierarchical logistic regression test showed that the secondary educational background (OR=0.492, 95% CI: 0.260-0.950) and the unavailability of safety policy at workplace (OR=0.334, 95% CI: 0.127-0.883) were significant predictor for poor awareness on OSH, meanwhile, unavailability of safety inspection at workplace (OR=0.317, 95% CI: 0.120-0.840) was the only predictor for poor OSH practice among respondents. **Conclusion:** Safety management practice at the workplace might be the pioneer to improve the KAP level among workers. Thus, management of universities can use the result of this study to make such improvement of safety and health at the workplace.

Keywords: KAP, OSH, Safety Management Practice, Public Universities, Office Workers

ABSTRAK

PENGETAHUAN, KESEDARAN DAN AMALAN MENGENAI KESELAMATAN DAN KESIHATAN PEKERJAAN DALAM KALANGAN PEKERJA PEJABAT DI UNIVERSITI AWAM DI MALAYSIA

NUR SYAFIQAH BINTI KHAIRUDDIN

Pengenalan: Menurut Pertubuhan Buruh Antarabangsa (2021), hampir 3 juta kematian berlaku setiap tahun disebabkan oleh kemalangan pekerjaan dan penyakit berkaitan pekerjaan. Salah satu aset yang mempengaruhi nilai syarikat ialah pekerja. Pekerja pejabat ialah kakitangan sokongan untuk organisasi yang bertanggungjawab melaksanakan pentadbiran dan menyokong operasi harian di tempat kerja. Mereka memainkan peranan penting untuk memastikan kualiti dan produktiviti untuk organisasi. Walau bagaimanapun, ramai orang mungkin terlepas pandang risiko bahaya pekerjaan yang mungkin terdedah oleh pekerja pejabat. Pengabaian terhadap keselamatan boleh menyebabkan mereka menghadapi risiko penyakit pekerjaan dan kemalangan pekerjaan. Oleh itu, adalah penting untuk memastikan keselamatan dan kesihatan mereka di tempat kerja dan kerana ia akan meningkatkan prestasi kerja mereka. **Objektif:** Untuk mengenalpasti tahap pengetahuan, kesedaran dan amalan tentang keselamatan dan kesihatan pekerjaan serta faktor yang berkaitan dengannya. **Metodologi:** Kajian ini merupakan kajian keratan rentas yang dijalankan dalam kalangan pekerja pejabat dari tujuh universiti awam di Malaysia. Saiz sampel sebanyak 317 telah dipilih secara rawak dengan menggunakan persampelan rawak yang mudah. Alat pengumpulan data ialah soal selidik tadbir sendiri yang disediakan dalam dua bahasa (Bahasa Melayu dan Bahasa Inggeris). Soal selidik ini terdiri daripada soalan sosiodemografi dan latar belakang pekerjaan dan terdapat 10 item untuk menilai pengetahuan tentang OSH, 10 item untuk menilai kesedaran tentang OSH, dan 10 item untuk menilai amalan mengenai OSH. Kesahan soal selidik ini diperolehi dengan kesahan kandungan dan kebolehpercayaannya telah disahkan oleh alpha Cronbach. Data dianalisis dengan menggunakan SPSS versi 26. **Keputusan dan Perbincangan:** Jumlah kadar maklum balas untuk kajian ini adalah 91.6%. Secara umumnya, 71.0% responden mempunyai pengetahuan yang baik, 61.8% mempunyai kesedaran yang baik dan 51.1% daripada responden mempunyai amalan yang baik tentang OSH. Ujian regresi logistik hierarki menunjukkan bahawa latar belakang Pendidikan menengah (OR=0.492, 95% CI: 0.260-0.950) dan ketiadaan dasar keselamatan di tempat kerja (OR=0.334, 95% CI: 0.127-0.883) adalah perintis penting untuk kesedaran yang lemah tentang OSH, sementara itu, ketiadaan pemeriksaan keselamatan di tempat kerja (OR=0.317, 95% CI: 0.120-0.840) merupakan satu-satunya perintis untuk amalan yang lemah terhadap OSH dalam kalangan responden. **Kesimpulan:** Amalan pengurusan keselamatan di tempat kerja mungkin menjadi perintis untuk meningkatkan tahap KAP di kalangan pekerja. Justeru, pihak pengurusan universiti boleh menggunakan hasil kajian ini untuk meningkatkan keselamatan dan kesihatan di tempat kerja.

Kata kunci: KAP, OSH, Amalan Pengurusan Keselamatan, Universiti Awam, Pekerja Pejabat

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LIST OF ABBREVIATIONS

DOSH	Department of Occupational Safety and Health
ILO	International Labour Organization
KAP	Knowledge, Awareness and Practice
NIOSH	National Institute for Occupational Safety and Health
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Act
SOCSSO	Social Security Organization



CHAPTER 1

INTRODUCTION

1.1 Background of Study

According to the International Labour Organization (2021), almost 3 million of death happen annually due to occupational accidents and work-related illness. They also mention that annually, there are approximately 400 million non-fatal work-related injuries which cause absenteeism more than 4 days from the workplace. In order to overcome this issue, it is important for the organization to support the objective of Occupational Safety and Health Act 1994 in Section 4(a) which is “providing the safety, health, and welfare of persons at work against risks to safety or health arising out of the activities of persons at work”.

One of the assets that influences the company's value is the employees (Ayu et al., 2021). The employees with a good well-being will of course make such contributions to the company. This show that occupational safety is critical because it would affect the well-being of the employees as well as the visitors (Ibrahim et al., 2012). However, the health of employees can be disturbed if they are working at the poor working environment. Study by Singh, (2005) has reveal that the person who suffer of the sick building syndrome will significantly affect the productivity of the company. Other study by Lamb and Kwok (2016), also support that the environmental stressors have an indirect effect on work performance by reducing the motivation,

cause a fatigue, and distractibility, which all of it are necessary for the high-functioning task performance.

Apart from that, the employees who work in the office environment may be at the risk of occupational related illnesses as they would be expose to various type of hazards such as psychosocial hazard, ergonomic hazard, electrical hazard, and physical hazard (Maurer, 2019). The psychosocial hazard basically can cause the mental health problem such as depression and anxiety among the employees (Cardinus Risk Management, 2015). Young and Bhaumik (2011), has claim that workplace mental health issues can result in a financial burden, as well as increased absenteeism, labor compensation claims, excessive medical costs, and decreased productivity. Besides that, ergonomic hazard is highly associated with the musculoskeletal disorder (MSD). In Malaysia, a total of 537 MSD have been documented from 2009 until 2014 (Rohani et al., 2016).

The work-related illnesses and accident do not only burden the employees, but it will affect the employer as well due to the high cost of healthcare service (Holzgreve et al., 2018). Organizations have numerous obstacles when it comes to managing human resources since it does not only handle the issues of staffing, training, development, and compensation, but also the issue of safety and security (Ibrahim et al., 2012). Somehow, this issue can be solved if there is a good safety culture in the workplace. J.O et al., (2018) have state that the occupational accidents will be lower if the employees are practicing the good work safety culture. In order to develop a safe culture at the workplace, the organization should play an important role. The safety culture bring the meaning that an organizational culture which prioritizes safety

principles, values, and attitudes, and it is embraced by the majority of employees in a company or workplace (Workplace Health and Safety Queensland, 2013). Hence it is very crucial to develop the safety culture in workplace because there is evidence from previous study which shown that poor safety culture can lead to the occupational accidents among the employees and consequently result in sickness absence (Ajslev et al., 2017).

1.2 Problem Statement

Occupational safety and health (OSH) issues usually more focuses on those who are working in the high-risk industry such as manufacturing and construction. However, according to National Safety Council (2021), education sector was ranked within the most dangerous industry since it has the greatest percentage of days out from work due to injury and illness per 10,000 workers. But still, most employees felt that public universities are safe and healthy place to work since academics and support staff are seen as experts who can look after their own safety and health (Ibrahim et al., 2012). They tend to overlook the occupational hazards that may be exposed by people who are working at the education sector. Due to that, the study related to OSH among this population is still limited and the data on knowledge, awareness, and practice on OSH among the office workers at the education sector remained unsure. Hence, a study among this population is necessary and should not be ignored since it is one of the sectors that covered under OSHA 1994.

According to Mahidin (2019), the total number of individuals employed in education sector has been increase by 3.9% in 2017 to 144,958 people, compared to

134,361 people in 2015. These individuals can be either academic staffs or non-academic staffs. Office workers were categorized as a non-academic staff, and they might be the backbone for the organization as they have a significant responsibility to ensure the operations in the university went well. While getting done the job task, they required to ensure their safety and health at the workplace. As mentioned in Section 14 OSHA 1994, the workers shall take reasonable care for their safety and health while at work. This is crucial aspect since previous study by Ardahan and Simsek (2016), have claimed that office workers frequently experience the musculoskeletal issue, meanwhile, Kang et al., (2016) revealed that the level of anxiety and depression among the office workers is seen to be higher than the manufacturing workers.

Furthermore, the poor safety management in the organization may cause the lack of OSH practice among the office workers. Poor safety management may include the insufficient trainings, poor implementation of safety policies and lack procedure in performing tasks at the workplace. Eventually this will lead to unsafe practice and affect both parties as the employees will suffer of occupational illness meanwhile the employers should spend higher cost for the health system. According to Eskandari et al. (2017), the major contributing factor on occupational accidents is the organizational factors which include the management commitment and management participation. Management should play an important role to improve the safety management practice at the workplace as it will not only enhance working environment, but it also has a favorable impact on employee's behaviors toward safety, which resulting in fewer workplace incidents (Vinodkumar & Bhasi, 2010). Apart from that, it is clearly mentioned under Section 15 OSHA 1994 that it shall be the duty of every employer to

ensure, so far as is practicable, the safety, health and welfare at work of all his employees.

1.3 Study Justification

This study is conducted in public universities in Malaysia as to determine the preliminary data of the level of Knowledge, Awareness, and Practice (KAP) on Occupational Safety and Health (OSH) among office workers. The university management may use the data to prioritize the action that should be taken to ensure the high level of safety and health among the employees. The action that can be provided by the management including education program on OSH. This actions eventually could enhance the knowledge on OSH among the office workers and can also protect them from the occupational hazards such as ergonomics hazard, psychosocial hazard and physical hazard that may be exposed by office workers at the workplace throughout the working hour.

Besides that, this study can help the office workers to understand their level of KAP on OSH. Understanding about safety at workplace is crucial for them as it is a part of their right to receive a safe and healthful working environment. The workers should be aware that accidents and ill health at the workplace are preventable as if they are having sufficient guidance and proper knowledge while performing their task. By having the awareness on OSH, they will make an improvement such as working in a safe manner in order to prevent the occupational injuries. Hence, it will consequently contribute to the reduction of occupational injuries rate among the office workers.

Lastly, this study will indicate that the safety management at workplace is very crucial. This is because the commitment given by the management to ensure the safety and health at the workplace can absolutely minimize the work-related illnesses as well as can create a safe work culture. Employer is responsible to provide the workers with the trainings, for instance is emergency response preparedness training. Both employers and employees must play a significant role in preventing and eliminating the risks and hazards at the workplace by having a two-way communication. The employer should encourage the workers to participate in the safety discussion because they are the person who are daily exposed with the hazard. Thus, a good safety management can result in a good outcome to the organization such as a better working performance among the workers.

1.4 Study Variable

1.4.1 Independent Variable

The independent variable in this study is the sociodemographic (age, gender, ethnicity, and educational background), occupational background (university, length of service, and employment status) and the safety management practice at the workplace.

1.4.2 Dependent Variable

The dependent variable in this study are the level of knowledge, awareness, and practice on occupational safety and health.

1.5 Research Questions

- i. What is the level of KAP on OSH among office workers?
- ii. Is there any association between sociodemographic factors, occupational background, and safety management practice with KAP on OSH among office workers in public universities in Malaysia?
- iii. What is the predictor for KAP on OSH?

1.6 Objectives

1.6.1 General Objectives

To determine the level of KAP on OSH and its association factors among office workers in public universities in Malaysia.

1.6.2 Specific Objectives

- i. To identify the sociodemographic distribution, occupational background, and safety management practice in public universities in Malaysia.
- ii. To assess the level of KAP on OSH among office workers in public universities in Malaysia.
- iii. To associate sociodemographic factors, occupational background, and safety management practice with KAP on OSH among office workers in public universities in Malaysia.
- iv. To identify the predictor for KAP on OSH among office workers in public universities in Malaysia.

1.7 Research Hypothesis

- i. The level of KAP on OSH among the office workers is good.
- ii. There is significant association between sociodemographic, occupational background, and safety management practice with the KAP on OSH among the office workers in public universities in Malaysia.
- iii. There is significant predictor for KAP on OSH among the office workers in public universities in Malaysia.

1.8 Definition of Variables

i. Knowledge

Conceptual: Knowledge is the information the respondents know about OSH and its importance (Ul Haq et al., 2012).

Operational: All questions of knowledge on OSH will be answered as one correct answer. The total score for knowledge on OSH will be categorized into good and poor knowledge based on median as the cut-off point (Rosliza et al., 2015).

ii. Awareness

Conceptual: Awareness is the perception that affects the behaviour of respondents in relation towards OSH and its importance (Kassahun & Mekonen, 2017).

Operational: The total score for awareness on OSH will be categorized into good and poor awareness based on median as the cut-off point (Rosliza et al., 2015).

iii. **Practice**

Conceptual: Practices towards OSH is the way the respondents behave to prevent any work-related injury (Kassahun & Mekonen, 2017).

Operational: The total score of practice on OSH will be categorized into good and poor practice based on median as the cut-off point (Rosliza et al., 2015).

iv. **Office Workers**

Conceptual: Workers who work in office and carry out administrative work for an organization.

Operational: Male and female office workers who at least have 1 year working experience at public universities will be recruited in this study.

v. **Public Universities**

Conceptual: Public universities is the place where it offers the bachelor's degrees, postgraduate programmes and may also offering diploma and foundation programmes which are government-funded higher educational institutions under the purview of Ministry of Higher Education (Ministry of Higher Education Malaysia, 2021).

Operational: Seven public universities located at Perlis, Kedah, Pahang, Kelantan, Selangor, Melaka, and Sabah are selected in this study.

vi. **Safety Management Practice**

Conceptual: Safety management refer to the activities that are carried out as to control hazards and vulnerabilities in such a way that accidents, failures, and

disturbances which can either be avoided or dealt with in a way that systems can continue to operate as required (Albrechtsen, 2012).

Operational: Safety management at the workplace such as the availability of safety policy and procedure, safety and health committee, safety inspection and participation of employees in safety discussion and decision making will be determine in the questionnaire.

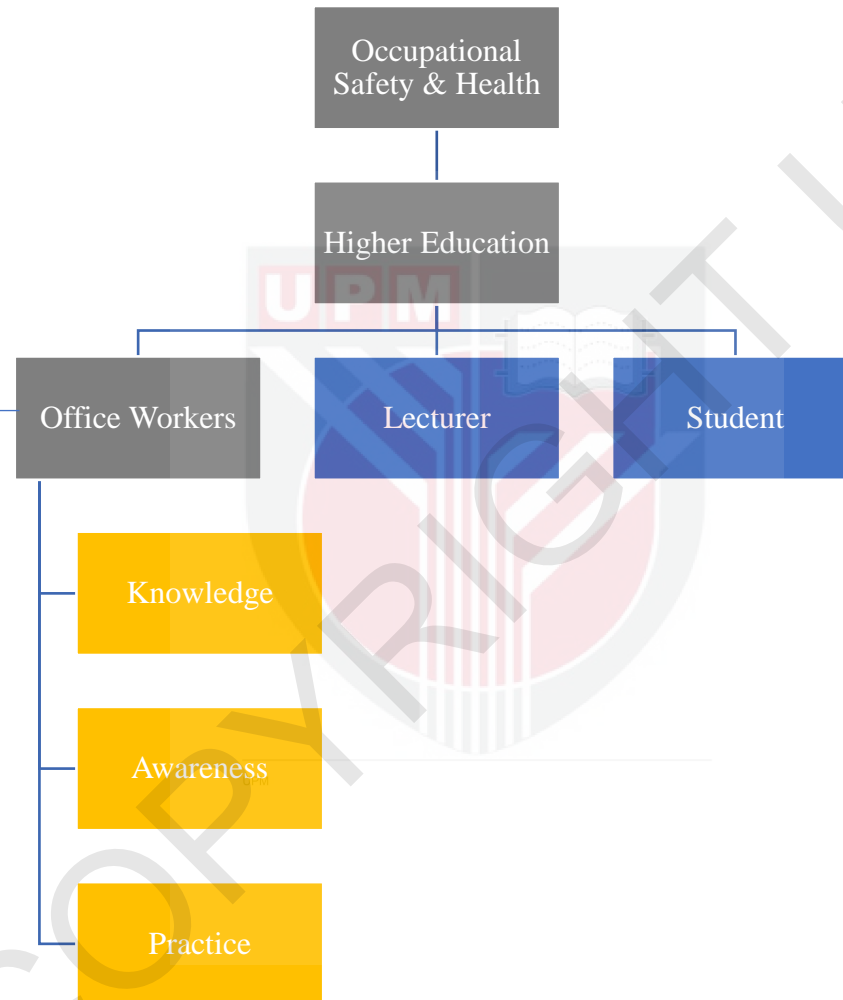
1.9 Conceptual Framework

Conceptual framework has showed the independent and dependent variables that will be assessed throughout this study. Figure 1.1 indicate that the scope of this study was related to the OSH and office workers who were working the at the higher education sector. The independent variables for this study were sociodemographic characteristics, occupational background, and safety management practice at the workplace, meanwhile, the dependent variables for this study were the knowledge, awareness, and practice on OSH.

Sociodemographic:
Age, gender, ethnicity, educational background

Occupational background:
University, employment status, length of service, attending safety training

Safety Management Practice:
Availability of safety policy, availability of safe work procedure, involvement in safety discussion and decision making, safety inspection at workplace, presence of safety committee, and management commitment in OSH



Independent Variable

Dependent Variable

Scope of Study

Figure 1.1: Conceptual framework

CHAPTER 2

LITERATURE REVIEW

2.1 Occupational Safety and Health Act 1994

Legislation is an important factor in ensuring the organization to create a healthy and safe workplace for their employees (Mansor & Sheau-Ting, 2020). In Malaysia, Occupational Safety and Health Act 1994 is the act that will cover the safety, health, and welfare of workers at the workplace. The principle of this Act was that maintaining health and safety should be the responsibility of those who create the hazard at the workplace (Bahari et al., n.d.). All type of occupations is covered under OSHA 1994 except for those who are working on board ships and armed forces. There are 10 work industries that have been listed in First Schedule of this OSHA 1994 which may include the Public Services and Statutory Authorities. Education sectors were subject to Public Services and Statutory Authorities under Article 132 of the Federal Constitution. Therefore, the employers and employees at the education sector need to comply with the requirements that have been stated in OSHA 1994.

Employers are required by the OSHA 1994 to make provisions for the safe use of the premises and to provide guidelines for a safe work system, which includes procedures and information on hazard control (Ibrahim et al., 2012). However, there are still a number of duties should be taken by the employees for their own safety (Bahari & Hassan, 2011). The general responsibilities of the employer have been states

in Section 15, meanwhile, the responsibilities of the employees have been stated in Section 24, OSHA 1994. The employees are required to take care of safety and health of themselves, cooperate with the employer, always wear the personal protective equipment that have been provide by employer as well as comply with all instructions and measure in the workplace.

The objectives of OSHA 1994 are to secure the safety, health and welfare of persons at work against risks, to protect persons at a place of work other than persons at work against risks, to promote an occupational environment for persons at work which is adapted to their physiological and psychological needs, and to provide the means whereby the associated occupational safety and health legislations may be progressively replaced by a system of regulations and approved industry codes of practice (DOSH, 2010). The management of the institution need to improve the workplace area and make it as a priority as will benefits all of the staff including the educators, students and visitors (Ismail et al., 2017). For organizations that do not comply with the standard requirements, the OSHA 1994 apply an anticipated penalty that is positively connected to the presence of risky work conditions (Hui-Nee, 2014). OSHA 1994 was established to promote, inspire, and support high standards of workplace safety and health (Bahari et al., n.d.). Somehow, the education sector's management was unaware of the necessity for a documented safety policy, as well as the need of conducting safety audits in the educational sector (Ainun Hamzah & Ariff, 2009) even though it was a compliance with the OSHA 1994 (Makhtar et al., 2018). Hence, the accidents that cause fatality on 2011 was about 176 cases out of 2,429 cases, and it might be due to the poor safety culture and the non-compliance of the requirements of OSHA 1994 (J.O. et al., 2018).

2.2 Overview Occupational Safety and Health at University

One of the most crucial issues that should not be overlooked in the workplace is a workplace safety (Zakaria et al., 2012). All sectors including the education sector should give a proper attention to this issue in order to enhance the performance at the workplace. Munir et al. (2018), also state that in this era of globalization, OSH must be applied in all sectors, including education, where realistic courses are provided to mitigate the likelihood of accidents and work-related illnesses. An incident that happen in a university because of a lack of safety practice will cause a negative impact on the nation's present and future (Hossain et al., 2014). As to ensure the safety among the occupants and to avoid the accidents from being happen due to negligence or unsafe action, the Occupational Safety and Health Act 1994 is enforced in the public universities (Abdullah, 2014).

Apart from that, safe and healthy working environment that would be suitable for the teaching and learning process should be provided by an educational institution for all staff, students, and other people involved (Rusu-Zagar et al., 2013). (Hossain et al. (2014) have mentioned that occupational safety and health (OSH) issue such as the secured infrastructure of buildings and sound facilities for a safe work in school are vital as it might be the requirements for the sustainable education system. Brewer and Walker (2011, as cited in Hossain et al., 2014) also have claimed that there is a significant impact on university quality assurance which is interrelated with OSH in the higher education. When all possible hazards are under control and safe, a safe and healthy work environment will be created, which also can contribute on the smooth

operation of the production processes, and as a result, overall production will be improved (Munir et al., 2018). Thus, the safety-related task needs to be performed by the management and employees as to obtain the higher safety in an organization (Eskandari et al., 2017).

2.3 Occupational Hazard

2.3.1 Ergonomics Hazard

Office workers' jobs have changed as the field of information technology has grown (Irmak et al., 2012). As a result, over half of all workers use a keyboard and mouse for a significant amount of time (Smith et al., 2014). According to the Malaysian National Institute of Occupational Safety and Health (NIOSH), more than 50% jobs need the workers to use the computer at the workplace. As the use of computer at the workplace become crucial nowadays, several studies have found that there is a association between the computer usage with the Musculoskeletal Disorder Related symptoms (Klussmann et al., 2008). Musculoskeletal disorders (MSDs) are a serious occupational health issue that affects employees, companies, and society.

MSD are injuries or pain in the human musculoskeletal system, including the joints, ligaments, muscles, nerves, tendons, and structures that support limbs, neck, and back (Centers for Disease Control and Prevention, 2021). Study by Okifuji and Hare (2010, as cited in Shariat et al., 2017) state that changes in work postures and job tasks have been linked to an increase in the frequency of low back pain, shoulder pain, and neck discomfort. The risk factors that lead to MSD can arise from a sudden exertion, repeated movements, repeated exposure to force, vibration, or awkward

posture (Occupational Safety and Health Administration, 2011). MSD can affect many different parts of the body including upper and lower back, neck, shoulders, and extremities. Examples of MSD include carpal tunnel syndrome, epicondylitis, tendinitis, back pain, tension neck syndrome, and hand-arm vibration syndrome (Occupational Safety and Health Administration, 2011).

MSD often occurred among office workers because they often maintain the same posture over a long workday and often several years, even natural postures like standing can lead to MSD such as low back pain. Study by Shariat et al. (2017) found that poor posture and other physical factors have cause a high prevalence of MSD on neck, shoulder and back. Postures which are less natural, such as twisting of or tension in the upper body, are typically contributors to the development of MSD due to unnatural biomechanical load of these postures. The awkward posture by the workers can cause to the muscle fatigue which consequently lead to muscle injury. Apart from that, study by Wærsted et al. (2010, as cited in Maakip et al., 2016) found that the physical hazard and psychosocial hazard at the workplace also are the risk factors for the workers to develop MSDs. Other than that, eye strain also a part of ergonomic hazard that often experienced by the office workers caused by spending a large portion of their workday at the computer. Workers' eyes may get dry and inflamed, and they may have difficulty to focus on their tasks.

MSDs are common all throughout the world, and they have both economical and personal implications (Shariat et al., 2016). It can cause significant to the lost work productivity and extra sick absence, both of which add to the financial burden on organizations (Yelin & Callahan 1995). Additionally, previous study mention that

MSDs are a significant source of absenteeism, disability, and compensation claims in the workplace (Klussman et al., 2008). It also will reduce the quality of life for an individual. Hence, the management at the workplace need to take an initiative to enhance the working condition by designing and layout the office properly and as well as perform the ergonomic intervention at the workplace in order to reduce the prevalence of MSDs (Besharati et al., 2018).

2.3.2 Psychosocial Hazard

A good state of health among the workers and a positive production shown by an organization may indicate that there is a positive work environment in the workplace. Having a healthy working environment will encourage the workers to build a good teamwork and communication which can enhance their job satisfaction. Employer should acknowledge that workers are the most valuable thing in the company as the healthier the workers, the better the performance of the organization. However, workers are frequently exposed to a poor and unpleasant working environment, which resulting in a variety of work-related health problems, low motivation, and low productivity (Kennedy, 2018). Nevertheless, the organization still tend to pay little attention to this psychological issue which in fact can give implications to both workers and employer. Psychosocial hazards are described by the International Labor Organization (ILO) as interactions between employees, their job content, work-related organization, and management.

Psychosocial hazards in the workplace are connected to the psychological and social aspects of the workplace, not only the physical ones. Workers are likely to be exposed to a variety of psychological hazards and risk factors because of their jobs.

These include stress, exhaustion, bullying, violence, aggression, harassment, and burnout, all of which can be detrimental to workers' health and wellness. Bad job design, organization, and management, as well as a poor social environment of work, all contribute to psychosocial hazards, which can lead to undesirable psychological, physical, and social effects (EU-OSHA, 2019). When the responsibilities of a job are excessive and beyond a worker's capability to cope, they will likely experience stress. Workers who are under a lot of stress might acquire major physical health problems, such as cardiovascular disease or musculoskeletal disorders, in addition to mental health issues. Psychosocial hazard also can arise from lack of support from employer and co-workers in the form of constructive criticism, problem solving, hands-on support, and the distribution of knowledge and resources (Department of Mines, Industry Regulation and Safety, 2020).

The implications of psychosocial hazard might be varied and it has affect both developed and developing countries (Kennedy, 2018). Therefore, the employers are required to give such attention on this issue as it could give a potential threat to the health and safety among the workers. According to a report from National Institute for Occupational Safety and Health (NIOSH) about stress at work, it states that there are 40% of workers reported their job was very or extremely stressful, 25% of people say their work are the most stressful aspect of their life, 75% of employees say that on-the-job stress is more today than it was a generation ago, 29% of employees said they were moderately to severely stressed at work, and 26% of employees stated they were often or very often burned out or anxious at work.

There have been significant links found between psychosocial risks such as bullying and worker performance, productivity of an organization, and the development of work-related illness. If a worker works in a psychosocially dangerous work environment or one that lacks the necessary worker motivation, his or her level of functioning and productivity will decline (Nkporbu & Douglas, 2016). Additionally, the absenteeism due to work-related accidents or illness is on the rise across the world, but so is absenteeism due to work-related mental health issues. Apart from that, work-related psychosocial strain has repeatedly been associated with heart rate variability (Loerbroks et al., 2010) and increased ambulatory blood pressure (Guimont et al., 2006).

Therefore, the management at the workplace should take such intervention by using the occupational safety and health measures in order to reduce and eliminate the incidence and occurrence of psychosocial hazard at the workplace (Kennedy, 2018). Such effective intervention taken in workplace could improve the working environment as well as enhance the productivity. The organization should not only focus on the productivity and ignoring the wellbeing of the workers as it will lead to the stressful working environment which can increase the psychosocial hazards at the workplace (Nkporbu & Douglas, 2016). This may show that the success of organizations is actually depends on the performance of the employees.

2.3.3 Physical Hazard

Physical hazard is substances or behaviors that endanger your physical well-being. They are the most prevalent and may be found in almost every workplace (Canadian Centre for Occupational Health and Safety, 2021). Physical hazards might include but not limited to temperature, slips, trips, falls, and noise. Temperatures that are extremely cold or extremely hot might be hazardous to your health. Heat stroke is the most significant danger in a very hot environment, whereas hypothermia and frostbite are the most important concerns in a very cold climate (Canadian Centre for Occupational Health and Safety, 2021).

Additionally, slip, trip, and fall are the most common physical hazard faced by office workers. Unattended spills, damp flooring, exposed wires, unsteady workstations, uneven flooring, loose carpets, and crowded spaces are all common causes of slips, trips, and falls (Maurer, 2019). Centers for Disease Control and Prevention (2021) states that slips, trips, and falls accounted for 27% of the 900,380 non-fatal work accidents that required time off in 2018 and 235,740 injuries caused by contact with items and equipment were severe enough to need time off work. Contact with items and equipment, overexertion and body response, and falls, slips, and trips without a fall were the three most common causes of work-related injuries treated in an emergency room.

Furthermore, noise is also one of the physical hazards that may be exposed by the workers in the office. According to Johnson (1991), the noise that generated in the office may lead to stress among the workers. Previous study also has shown that

approximately 92% of the workers get difficulty to perform their work due to the noise exposure (Oseland and Hodsman, 2018). The noise in the office environment may come from the speech and conversation, office equipment, installations and background noise (Pan & Cheung Chan, 2007). Office workers have claimed that noise is the second factor of distraction after the poor control of temperature in the workplace (Leesman, 2017). In fact, noise in the office environment does not only affect the productivity in the workplace, but, it does also affect the activity such as text reading and typing among the workers (Steps et al., 2019). Apart from that, the workers also may suffer of high blood pressure if they are exposing to the the excessive noise in the workplace (Oseland & Hodsman, 2017).

2.3.4 Chemical Hazard

Chemical has been used to facilitate the cleaning of dust and dirt, for disinfection and for the surface maintenance. Exposure to the chemical may poses the health risk such as allergies and asthma to the people. In office environment, the cleaner or the staff may use the cleaning agent which consist of certain chemicals for the cleaning purpose. However, little have acknowledged about the exposure of chemical contaminants among the office workers in working environment (Young et al., 2021). This can be harmful for the health of office workers since they are spending most of their time inside the office building (U.S. Bureau of Labor Statistics, 2013). Previous studies indicate that there is an increasing level of volatile organic compound (VOC) in the workplace due to the use of cleaning agent. This VOC can remain in the working environment even after the cleaning process which eventually can lead to the poor indoor air quality (IAQ) (Wolkoff et al., 1998).

Other than cleaning agent, office workers also may be exposed to the chemical hazards due to the usage of printing device. Because of that, it is very important for the employer to develop the effective exposure assessment and control strategies in order to minimize the emission of chemical contaminants from the printing device (Stefaniak et al., 2017). Previous studies have proved that there are few chemicals such as VOCs, ozone (O₃) and particulate matter (PM) have been released during the printing operations which will absolutely reduce the IAQ (Lee and Hsu, 2007; Wang et al., 2011; Mullins et al., 2013). Field and chamber studies have found that, during the photocopy process, there are more than 60 types of VOCs have been found in the environment (Leovic et al., 1996; Lee et al., 2006; Lee and Hsu, 2007; Destailats et al., 2008; Sarkhosh et al., 2012). The VOCs that release to the office environment may put the workers to the high risk of genotoxic effect as several in vitro studies have been done on lung cell culture (Khatri et al., 2013).

In addition, building materials, personal products and outdoor pollution also can contribute to the mixture of harmful chemicals in indoor environment (Lucattini et al., 2018; Weschler & Nazaroff, 2008). Indeed, the floor, wiring, building materials, food packaging, cosmetics and even the personal care product may consist of phthalate plasticizers (Wittassek et al., 2011). This kind of chemical can lead to the poor sperm quality, pregnancy problem, improper fetal development and increase the risk of cardiometabolic health (Mariana et al., 2016). Last but not least, the chemical known as pesticide also have been found in indoor building as it is very important for the pest control and the management of vector-borne disease. According to Handford et al. (2015, as cited in Young et al., 2021), the pesticide can sometimes will be used in the carpets and textile as to control the pests and fungi.

2.4 Statistic of Occupational Accident

International Labour Organization (n.d.), define that an occupational accident was unexpected events that happens at work that causes a death or non-fatal injury. Occupational accidents may include but not limited to acute poisoning, slip, and fall while performing the task at workplace. According to Department of Occupational Safety and Health (DOSH; 2020), the total case for permanent disability in 2020 is 274, non-permanent disability is 6,446 and the total number of deaths is 213. With these, the statistic cases for occupational accident in 2020 is equal to 6,933. DOSH also reported the rate for occupational accident on that year is 2.18 which have shown the reduction as compared to 2019 which is 2.71. The reduction of occupational accident rate in 2020 may be influenced by the pandemic of Covid-19 as many of the sectors cannot be operated as usual. However, previous study conducted by Zakaria et al. (2012) have state that the trend of occupational accidents have shown to be increase in every year which consequently cause the unexpected cost for the industry. Abdullah, (2013) also support the statement that the occupational accidents are non-stop, and the number of occupational accidents is kept on rising from year to year. Figure 2.1 have shown the trend of occupational accident statistic from 2016 until 2020 in Malaysia.

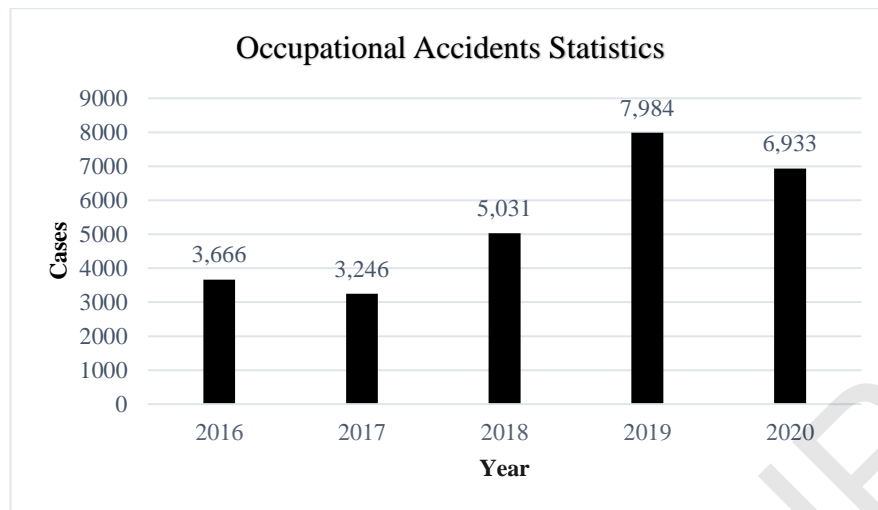


Figure 2.1: Occupational Accident Statistic 2016-2020 (DOSH, 2020)

Based on annual report by Social Security Organization (2018), there is approximately 73,000 accident cases was reported on 2018. These cases have increase for 3.88% as the accident cases during 2017 is equal to 69,968. Figure 2.2 have shown the trend of accidents reported from 2014 until 2018. All the cases included the report from industrial accidents, commuting accidents as well as fatal cases. Occupational accident statistics are important for determining how safe and secure the workplace and working surroundings are. It provides the information about workers' exposure to hazards and indicate which groups of workers are most vulnerable (Mahidin, 2021). Zakaria et al. (2012) mention that determination of the contributing factors to the occupational accident is very crucial as to prevent the undesirable events in the future and to minimize the injuries as well as the cost of business. There is a huge cost need to be spent when there's undesired incident happen at the workplace. As a prove, SOCSO (2018) have reported the expenditure for permanent disablement benefit on that year was RM 566.48 billion as compared to the previous year which is RM 536.35 billion. The trend seems to keep on increasing for the upcoming years if there is no actions and initiative taken by both employers and employees.

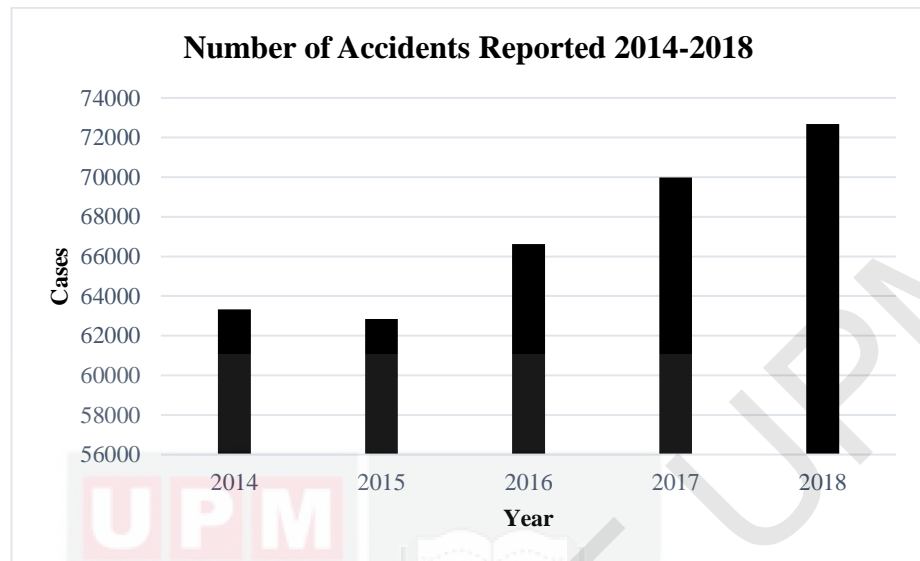


Figure 2.2: Number of Accidents Reported 2014-2018 (Source: SOCSO, 2018)

Since education sectors were subject to the Public Services and Statutory Authorities under Article 132 of the Federal Constitution, thus the statistics of occupational accidents was retrieved from the year of 2015 until 2020 from DOSH. Figure 2.2 showed the trend of occupational accident in this sector has shown to be fluctuate from year to year in which the higher reported cases was 110 on 2016. However, the data might not be accurate due to the unreported occupational accidents to DOSH. Unreported accident cases to DOSH were considered as unethical practice and indicate the non-compliance of the organization towards OSHA 1994 under Section 32(1) which have emphasized that employer shall notify the nearest occupational safety and health office of any accident, dangerous occurrence, occupational poisoning, or occupational disease which has occurred or is likely to occur at the place of work. As a sequence, section 51 of OSHA 1994 has prescribed penalties for failure to report and keep records. The penalty for conviction is a fine not exceeding ten thousand ringgit or to imprisonment for a term not exceeding one year

or to both and, in the case of a continuing offence, to a fine not exceeding one thousand ringgits for every day or part of a day during which the offence continues after conviction.

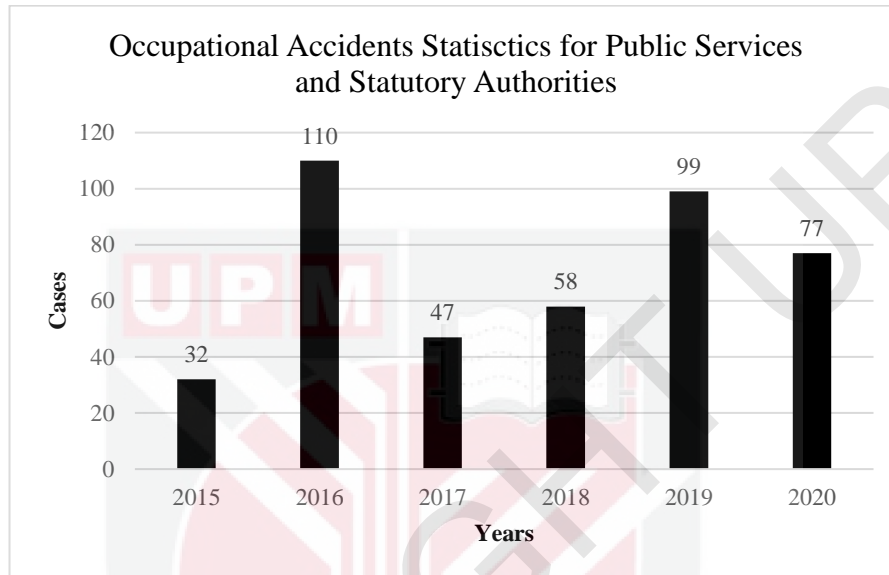


Figure 2.3 Occupational Accidents Statistics for Public Services and Statutory Authority

2.5 Safety Management Practice

Hazards or safety risks in the institution are managed through the safety management (Harms-Ringdahl, 2004). Safety management is the processes in organizations that are meant to limit hazards to workers' health and safety while also ensuring that the company can easily comply with applicable regulations (Fernández-Muñiz et al., 2009). Papadakis and Amendola (1997, as cited in Harms-Ringdahl, 2004) have mentioned that the safety management will include a wide range of activities, initiatives, programs, and so on, all of which will be focused on the technical, human and organization aspects referring to the tasks of the worker in the

organization. The organization's commitment to safety is reflected in the safety management system, which has a significant impact on employees' opinions of the need of safety in the workplace (Vinodkumar & Bhasi, 2010).

Appropriate safety management begins with the safety policy: an organization's safety goals and direction, as formally established by the top management (Mitchison & Papadakis, 1999). Safety policy will be determined and implemented by the safety management (Liu et al., 2020). Previous study found that there is a presence of a strong link between good occupational safety and health policy compliance and the organization's long-term economic growth and development (Akpan, 2011). Safety resources and responsibilities, risk identification and mitigation, standards and procedures, and human factors-based system design are all covered by the policy. As to create a safe working environment, all workers should be aware of the safety policy and its usefulness (Granerud and Rocha, 2011). Therefore, promoting a safety policy is an effective approach to convey and disseminate safety awareness and goals within the organization (Battaglia et al., 2014).

In addition, safety training is also the component of safety management. Workers should be trained in order to adopt and apply the written safety policies into their practice (Kim et al., 2019). Apart from that, Vredenburg (2002, as cited in Vinodkumar & Bhasi, 2010), stated that in order to enhance workers' safety and health level, employers should also provide a systematic, complete safety and health training program for the new workers, assign a mentor to them as well as use a buddy system to assist them to learn about the safety, health, and quality systems. The good outcome of safety performance across the industries might be due to the safety training as the

training has been classified as one of the most important safety management practice (Rose & Rae, 2017). By having the safety training, the accidents at workplace seem to be more predictable (Vinodkumar & Bhasi, 2010). Previous studies have shown that the effective safety training may reduce the number of occupational accidents and injuries (Namian et al., 2016). Teo et al. (2005) also support this statement which is there is fewer number of accidents have been reported as there is more attention given in the safety training.

Furthermore, the involvement of workers in safety has been considered as safety management practice. Safety concerns and actions by the management should be widely publicized among the workers; safety meetings can be an effective way to include workers in safety issues (Dedobbeleer & Béland, 1991). Workers can also be involved in the safety and health committee which encompass of workers' representatives, participated in decision making related to safety, determined the safety issues, and also had a consultation regarding the safety matters (Vinodkumar & Bhasi, 2010). Those employees who are the part of safety and health committee should be included in the development of the safety policy, which should be signed by the senior operating officer to show management's commitment (Akpan, 2011). Employee engagement is widely acknowledged as a critical component of good health and safety management, since employees are best positioned to recognize and understand the risks and hazards in their own workplace (Howes, 2007).

Safety communication or safety supervision is the element in the safety management. Safety communication is more than just providing safety information in the workplace, but, it also includes influencing employees' safety behaviour and

attitudes (Shuen & Abdul Wahab, 2016). Employees' safety behaviour at work is claimed to be predicted by safety communication (Kaskutas et al., 2013). Study by Michael et al. (2006) shown that employees' behaviour, such as their safety performance, has been proven to be influenced by effective safety communication. Effective communication between management and workers is thought to reduce the likelihood of human factor accidents (Shuen & Abdul Wahab, 2016). Safety communication breakdowns have not only affected workers' ability to respond appropriately in critical situations, but they have also caused safety performance to be worsen (Maxfield et al., 2011). In fact, frequent safety discussions are an important approach to recognise employees' dedication to safety in the workplace (Fruhen et al., 2013).

2.6 Guideline on Occupational Safety and Health in the Office

Department of Occupational Safety and Health (DOSH) have come out with the Guideline on Occupational Safety and Health in the Office, 1996. This guideline provided the minimal requirements for OSH and practical guidance on how to reduce the most common office hazards in order to avoid accidents and work-related illness. The guideline has emphasized on the office environment and health, safety in the office, keyboard equipment, rest breaks and exercise as well as legal requirements.

There are several factors have considered for the office environment and health which include but not limited to temperature and lighting. According to this guideline, most individuals tend to operate efficiently in temperatures ranging from 20°C to 26°C which is within the acceptable range for temperature stated in Industry Code of

Practice on Indoor Air Quality 2010. Despite of working more efficiently, appropriate temperature in the office environment may prevent the risk to develop ill health. Low temperatures raise the risk of cardiovascular and respiratory disorders, whereas high temperatures raise the chance of acute non-specific symptoms such as dry eyes and respiratory symptoms. Higher and lower temperatures both have the potential to effect performance and learning efficiency (Wolkoff et al., 2021). Meanwhile for the lighting, previous study by S. M. Pauley (2004, as cited in Katabaro & Yan, 2019) shown that insufficient lighting in the workplace has also been linked to an increase in workplace accidents, work dissatisfaction, and other types of discomfort. Hence, this guideline is beneficial as it does provide the information regarding the suitable light level in the office which based on the Malaysia Standard for Interior Lighting.

In term for safety in the office, the appropriate planning and housekeeping at the workplace is important to prevent the office accidents form occurred. For instance, the liquid spillage needs to be clean as soon as possible in order to prevent slip and fall. Additionally, the caution signage can be put at that area to ensure that workers are aware on the abnormal situation. Other than that, the safety data sheet for any chemical that used in the office such as printing inks, photocopier toners, cleaning chemicals and correction fluids need to be kept properly at the work area. Employer should also communicate about the emergency responses plan among the workers in case of the undesired events occurrence.

Since nowadays most of the office workers were spending most of their time in front of the computer, this guideline has also provided the information regarding the proper usage of keyboard equipment. This part has taking consideration on the

ergonomic hazards that exist in the office area. The proper placement of the keyboard, screen and the characteristic of the mouse that can minimize the ergonomics risk have been mentioned in this guideline. The office worker also should take a rest break and do some movement to relieve the strain associated with the keyboard work. Thus, employer should be aware on this guideline in order to improve the working environment at the workplace because Section 15 OSHA 1994 state that it is the responsibility of the employer to ensure the safety, health and welfare among the workers at workplace.



CHAPTER 3

METHODOLOGY

3.1 Study Design

This study used a cross-sectional study design which aimed to determine the level of knowledge, awareness and practice on occupational safety and health among office workers in the selected 7 public universities in Malaysia. The data in this study were gathered at a single point in time.

3.2 Study Location

There were 20 public universities in Malaysia and a total of 7 public universities were randomly selected for this study which include Universiti Kebangsaan Malaysia, Universiti Islam Antarabangsa, Universiti Pendidikan Sultan Idris, Universiti Utara Malaysia, Universiti Malaysia Kelantan, Universiti Teknikal Malaysia Melaka, and Universiti Malaysia Sabah.



Figure 3.1: Study Location

3.3 Study Duration

This study conducted from March 2021 until February 2022. During this period, the data on knowledge, awareness and practice on occupational safety and health among the office workers were obtained.

3.4 Study Sampling

3.4.1 Study population

The target population in this study was the office workers from the selected seven public universities in Malaysia.

3.4.2 Sampling Frame

The sampling frame in this study is a list of target population from which sample were drawn. In this study, 346 office workers in from public universities were obtained from which samples were drawn. Office workers from public universities who fulfil the inclusion criteria of the study were selected based on simple random sampling. The office workers recruited in this study required to have at least one year working experience as they tend to receive the safety training, safety education as well as supervisory program within this period of time.

3.4.3 Sampling Criteria

3.4.3.1 Inclusion Criteria: 1) Male and female office workers

2) Permanent, contract and temporary worker

3) At least 1 year working experience at university

3.4.3.2 Exclusion Criteria: 1) Academic staffs

3.4.4 Sampling Method

The sample in this study selected throughout the seven public universities by using the simple random sampling. At first the management of the universities will provide the list name of office workers. Then, the respondents randomly selected and the total of 346 office workers were recruited to join in this study based on the inclusion and exclusion criteria.

3.4.5 Sample Size

The sample size was adapted from the objective in this study which was to determine level of knowledge, awareness and practice on occupational safety and health among the office workers. In this study, the sample size for the three components were calculated based on previous study by (J.O et al., 2018). The highest number between the components was selected and used as sample size for this study.

Table 3.1: Sample Size Calculation for KAP on OSH

Objectives	Formula	Prevalence from previous study	Total sample size
To determine the level of	$N = \frac{Z^2_{1-\alpha/2} P(1-P)}{d^2}$ N = sample size	Based on study conducted by	N=78

<p>knowledge on occupational safety and health among the office workers</p>	<p>$Z = Z$ value (1.96 for 95% confidence level)</p> <p>$P =$ expected prevalence or proportion (in proportion of one; if 20%, $P = 0.2$),</p> <p>$d =$ confidence interval expressed as decimal (5% = 0.05)</p>	<p>J.O et al. (2018);</p> <p>$P = 94.6\%$</p>	
<p>To determine the level of awareness on occupational safety and health among the office workers</p>	<p>$N = \frac{Z^2_{1-\alpha/2} P(1-P)}{d^2}$</p> <p>$N =$ sample size</p> <p>$Z = Z$ value (1.96 for 95% confidence level)</p> <p>$P =$ expected prevalence or proportion (in proportion of one; if 20%, $P = 0.2$),</p> <p>$d =$ confidence interval expressed as decimal (5% = 0.05)</p>	<p>Based on study conducted by J.O et al. (2018);</p> <p>$P = 69.6\%$</p>	<p>$N=315$</p>
<p>To determine the level of practice on occupational safety and health</p>	<p>$N = \frac{Z^2_{1-\alpha/2} P(1-P)}{d^2}$</p> <p>$N =$ sample size</p> <p>$Z = Z$ value (1.96 for 95% confidence level)</p>	<p>Based on study conducted by J.O et al. (2018);</p>	<p>$N=272$</p>

among the office workers.	<p>P = expected prevalence or proportion</p> <p>(in proportion of one; if 20%, P = 0.2),</p> <p>d = confidence interval expressed as decimal</p> <p>(5% = 0.05)</p>	P = 76.1%	
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Thus, the number of respondents that should participate in this study was 315 as it was the highest number based on the calculation. However, after taking consideration of 10% of non-response rate, the minimum respondents that should be recruited for this study is 346 respondents.

3.5 Study Flowchart

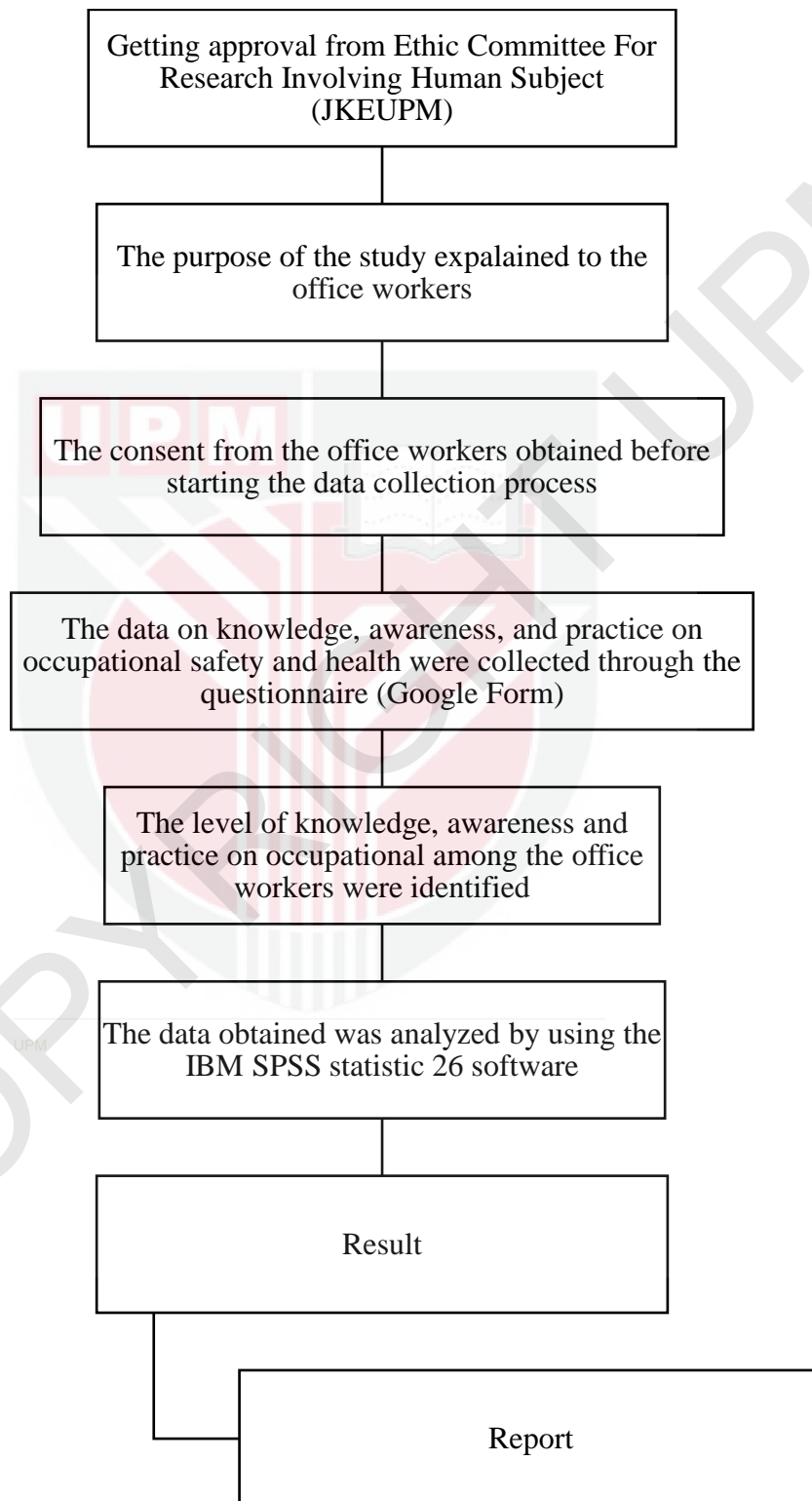


Figure 3.2: Study Flowchart

3.6 Study Instrument

The main instrument for this study was a structured self-administered questionnaire. This questionnaire was adapted and modified based on reviewing the standardized questionnaire by Institute for Work & Health (2016), Nordic Occupational Safety Climate Questionnaire (NOSACQ-50) and several literature reviews (Vinodkumar & Bhasi, 2010; Beus et al., 2019; Mohamed, 2014). This questionnaire consisted of bilingual language which were English and Malay. There were 6 sections and 48 questions in this questionnaire that were answered by the respondents.

3.6.1 Section A (Sociodemographic Information)

This section required the sociodemographic information of the respondents included the age, gender, ethnicity, and educational background.

3.6.2 Section B (Occupational Background)

This section required the information of occupational background of the workers included the university, job title, job grade, employment status, length of service and safety training.

3.6.3 Section C (Safety Management Practice)

This section consisted of 8 questions related to safety management practice at the workplace. The respondents' opinion on safety management at the workplace were obtained through this section.

3.6.4 Section D (Knowledge on OSH)

This section consisted of 10 true or false questions regarding the knowledge on OSH. The questions in this section were related to the facts stated in OSHA 1994 and other relevant hazards that were likely to be exposed by the office workers at the workplace which include ergonomics hazard, psychosocial hazard, chemical hazard, biological hazard and poor indoor air quality. The scoring method for knowledge on OSH was based on the score of true = 1, false = 0. Then, the total marks were sum up to represent the level of knowledge among the respondent. The knowledge score was categorized into good and poor knowledge with the median being the cut-off point (Rosliza et al., 2015)

3.6.5 Section E (Awareness on OSH)

This section consisted of 10 questions related to the awareness towards OSH. In this section, the questions were related to awareness about the employees and employer responsibilities at the workplace as well as the awareness on safety precautions that should be taken while performing work task. Respondents are required to answer based on the Likert scale from 1 to 4, where 1 means strongly disagree, 2 means disagree, 3

means agree, and 4 means strongly agree. The awareness score was categorized into good and poor awareness with the median being the cut-off point (Rosliza et al., 2015).

3.6.6 Section F (Practice on OSH)

This section consisted of 10 questions related to practice on OSH in workplace. The basic questions relating to safe work practice, reporting accident to employer and the corrective action taken to ensure the safety at workplace were asked in this section. Respondents are required to answer this section by using the 5 Likert scale questions, where 1 means never, 2 means rarely, 3 means sometimes, 4 means often, and 5 means always. The practice score was categorized into poor and good practice with the median being the cut-off point (Rosliza et al., 2015).

3.7 Quality Control

3.7.1 Validity

For the content validity of the instrument, the questionnaire was sent to the three expert panels in occupational safety and health field for comments and improvement. The experts commented on whether each of the items in the questionnaire were relevance, clear, and easy to understand; whether the instructions were clear and complete; and whether the response options were adequate for the questions and statements. Based on the feedback received, the questionnaire amended accordingly.

3.7.2 Reliability

To ensure the reliability of the structured self-administered questionnaire, it was pre-tested prior to the main study. 10% of the sample size involved in the pre-test study. People that involved in pre-test study had the similar criteria with the actual respondents. They were required to fill out the questionnaire with comments and suggestions. The comments and suggestions received were reviewed and incorporated into the final instrument before being distributed for data collection. This pre-test study was important to ensure that all terms and questions consisted in the questionnaire were understandable by the respondents. The reliability of the pre-tested questionnaire showed the internal consistency of assessment using the Cronbach's alpha, which was found to be 0.752 for the reliability of the questionnaire.

3.8 Data collection

After obtained ethical approval from Ethic Committee for Research Involving Human Subject (JKEUPM), the permission letter was sent to the management of 7 public universities before conducting this study at their place. Data collection began once permission was granted from the respective universities. The list of office workers' email has been provided by the management of the universities, thus, the invitation email to participate in the study were sent to the office workers. Office workers that met the inclusion and exclusion criteria is highly invited to be the respondents in this study. The data regarding knowledge, awareness and practice on occupational safety and health were collected through the google form. Prior the data collection, the respondents were informed about the purpose of the study and the

inform consent form was distributed among them. The inform consent form stated that the information obtained in this research will be stored and conducted in a confidential manner. In addition, they also well informed that if the results of this research was published or presented to the public, their identity would not be revealed as well. Only research team were allowed to access their information as for the research purpose. The respondents of this study required to answer all questions in the questionnaire which consisted of 6 sections. It took about 5 to 10 minutes to complete the questionnaire. As to maintain the confidentiality of the data, the participants were not required to identify themselves when answering the questionnaire. The data obtained was analysed by using the IBM SPSS Statistic 26 software.

3.9 Data Analysis

Table 3.2 Statistical Analysis

Objectives	Statistical Analysis
To identify the sociodemographic distribution, occupational background, and safety management of office workers in public universities in Malaysia.	Descriptive Analysis
To assess the level of knowledge, awareness, and practice (KAP) on occupational safety and health (OSH) among office workers in public universities in Malaysia.	Descriptive Analysis
To associate the sociodemographic factors with KAP on OSH among office workers in public universities in Malaysia.	Chi Square Test Hierarchical Logistic Regression
To associate the occupational background with KAP on OSH among office workers in public universities in Malaysia.	Chi Square Test Hierarchical Logistic Regression
To associate the safety management with KAP on OSH among office workers in public universities in Malaysia.	Chi Square Test Hierarchical Logistic Regression

3.10 Expected outcome

- i. The knowledge, awareness and practice on occupational safety and health among the office workers was good.

- ii. There was significant association between sociodemographic and the knowledge, awareness and practice on occupational safety and health among the office workers in public universities in Malaysia.
- iii. There was significant association between occupational background and the knowledge, awareness and practice on occupational safety and health among the office workers in public universities in Malaysia.
- iv. There was significant association between safety management and the knowledge, awareness and practice on occupational safety and health among the office workers in public universities in Malaysia.

3.11 Ethical Consideration

This research involves human as the respondents, so ethical considerations was obtained before proceeding the study. Approval obtained from Ethic Committee for Research Involving Human Subjects (JKEUPM) Universiti Putra Malaysia for permission to conduct the study. Once permission has been granted, informed consent obtained from the respondents to give them the freedom of choice whether they voluntarily participate in this research or not. Respondents were told that they were free to withdraw their participation at any time and that the data gathered during the research remained private and confidential. The respondents' anonymity and confidentiality were assured. Respondents were fully informed of what they may be questioned for, how the results may be used, and what consequences may occur (if any). In this research, participants were told that their sociodemographic data would be collected, and they required to answer a questionnaire regarding knowledge, awareness and practice on occupational safety and health.

3.12 Covid-19 Precaution

Coronavirus disease (COVID-19) was a transmissible disease which caused by the SARS-CoV-2 virus (World Health Organization, 2021). This disease can be spreaded from infected person to the other people when they were coughing, sneezing or even talking. Practicing a social distancing, wearing a mask, and using the hand sanitizer is very crucial in order to minimize the risk from getting infected with this COVID-19 disease. Numerous considerations need to be taken during the pandemic of COVID-19 as to ensure the safety and health of the respondents as well as the researcher. Hence, as a precaution, this study was conducted through online platform by using the google form that distributed through the email of the respondents. This precaution step was very important to avoid the physical contact with the respondents.

CHAPTER 4

RESULTS

4.1 Sociodemographic Information and Occupational Background among Office Workers in Public Universities in Malaysia

Table 4.1 shows the youngest age of respondent was 22 years old while the oldest was 58 years old. The mean age of the respondent was $37.92 \pm (SD)7.49$ years and the majority (166 or 52.3%) of the respondent falls into the age category of 36 to 51 years old. As for the gender, the majority (204 or 64.4 %) of the respondents were female. In terms of ethnicity, the majority (301 or 95.0%) of the respondents were Malay. For the educational background, majority (259 or 81.7%) of the respondent received the tertiary education. Majority (187 or 59%) of the respondents are working at the non-certified university. Additionally, (149 or 47%) of the respondents have 11-20 years working experiences at the university with the mean of $12.12 \pm (SD) 6.93$ years. In term of employment status, majority (254 or 80.1%) respondents were working permanently at the university and (280 or 88.3%) of respondents have received the safety training at the university.

Table 4.1: Sociodemographic information and occupational background among office workers in public universities in Malaysia. (N=317)

Sociodemographic Information and Occupational Background		Frequency (n)	Percentage (%)	Mean \pm sd
Age	20-35	133	42.0	37.92 ± 7.49

	36-51	166	52.3	
	>51	18	5.7	
Gender	Male	113	35.6	
	Female	204	64.4	
Ethnicity	Malay	301	95.0	
	Chinese	1	0.3	
	Others	15	4.7	
Educational Background	Secondary education	58	18.3	
	Tertiary education	259	81.7	
Respondent classification	Certified university	130	41.0	
	Non-certified university	187	59.0	
University	Universiti Malaysia Kelantan	61	19.2	
	Universiti Malaysia Sabah	19	6.0	
	Universiti Islam Antarabangsa Malaysia	50	15.8	
	University Utara Malaysia	22	6.9	
	Universiti Teknikal Malaysia Melaka	31	9.8	
	Universiti Pendidikan Sultan Idris	75	23.7	
	Universiti Kebangsaan Malaysia	59	18.6	
Length of service	1-10 years	135	42.6	12.12±6.93
	11-20 years	149	47.0	
	>20 years	33	10.4	

Employment status	Permanent	254	80.1
	Contract	55	17.4
	Temporary	8	2.5
Received safety training	No	37	11.7
	Yes	280	88.3

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.2 Safety Management Practice in Public Universities in Malaysia

Table 4.2 shows the total distribution of safety management practice at both certified and non-certified university of ISO45001:2018. Overall, majority of the respondents (90.9%) were working at the workplace where safety policy is available. Most of the respondents (97.2%) had been working at the workplace where safe work procedure is available. Over half of the respondents (67.8%) have been involve in the safety discussion and decision making at the workplace. (89.9%) of the respondents were working at the place where the safety inspection is undertaken at the workplace. Majority of the respondents (96.2%) state that there is a presence of safety committee at workplace, and (95.9%) of the respondents claimed that the management have given a commitment towards OSH at the workplace.

Table 4.2: Safety management practice in public universities in Malaysia.

(N=317)

Safety Management Practice	Frequency (n)	Certified university	Non- certified university
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Availability of safety policy at workplace	No	29 (9.1)	9(2.8)	20(6.3)
	Yes	288 (90.9)	121(38.2)	167(52.7)
Availability of safe work procedure	No	9 (2.8)	2(0.6)	7(2.2)
	Yes	308 (97.2)	128(40.4)	180(56.8)
Involvement in safety discussion and decision making	No	102 (32.2)	26(8.2)	76(24.0)
	Yes	215 (67.8)	104(32.8)	111(35.0)
Safety inspection at workplace	No	32 (10.1)	7(2.2)	25(7.9)
	Yes	285 (89.9)	123(38.8)	162(51.1)
Presence of safety committee at workplace	No	12 (3.8)	5(1.6)	7(2.2)
	Yes	305 (96.2)	125(39.4)	180(56.8)
Management commitment in OSH	No	13 (4.1)	4(1.3)	9(2.8)
	Yes	304 (95.9)	126(39.7)	178(56.2)

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.3 Knowledge on OSH among Office Workers in Public Universities in Malaysia

Table 4.3 shows the distribution of correct and incorrect answer for knowledge on OSH. Majority (310 or 97.8%) of respondent acknowledge that safety, health, and welfare of the office workers is being cover under the occupational safety and health act 1994. Most of the respondents (289 or 91.2%) understand that it was compulsory to establish Safety and Health Committee in the universities. Apart from that, (314 or 99.1%) of the respondents knew that employer shall give such information, instruction, training, and supervision to the employee as to ensure the safety and health.

Additionally, (295 or 93.1%) of the respondents noticed that the work-related musculoskeletal disorder occurred when the of the worker unmatched the physical requirements of the job. Three-fourths of the respondents (237 or 74.8%) knew that the workplace social support was a valuable tool to prevent work-related stress. (214 or 67.5%) acknowledge that the safety data sheet for printing ink and photocopier toner were necessary to be kept at the work area. Moreover, (208 or 65.6%) of the respondents knew that low humidity could increase the frequency of static electricity shocks. Additionally, most of the respondents (312 or 98.4%) recognized that spending time in the building that has poor indoor air quality can cause the sick building syndrome (acute ill health and discomfort) among the occupants. Only (135 or 42.6%) of the respondents knew the fire extinguisher class A was design for organic material such as wood, plastics, and paper. Lastly, (251 or 79.2%) of the respondents knew that clean and well-maintained mechanical ventilation or air-conditioning can prevent the growth of bacteria and other organisms.

Table 4.3: Knowledge on OSH among office workers in public universities in Malaysia. (N=317)

No.	Knowledge on OSH	Correct		Incorrect	
		n	%	n	%
K1	Safety, health, and welfare of the office workers is being cover under the Occupational Safety and Health Act 1994	310	97.8	7	2.2
K2	It is non-compulsory to establish Safety and Health Committee in the universities.	289	91.2	28	8.8
K3	Information, instruction training, and supervision shall be provided by the	314	99.1	3	0.9

employer to ensure the safety and health of employees.

K4	Work-related musculoskeletal disorders occur when the physical capabilities of the worker unmatched the physical requirements of the job.	295	93.1	22	6.9
K5	Workplace social support cannot be considered a valuable tool for preventing work-related stress.	237	74.8	80	25.2
K6	Safety data sheet for printing ink and photocopier toner is unnecessary to be kept in work location.	214	67.5	103	32.5
K7	Low humidity can increase the frequency of static electricity shocks.	208	65.6	109	34.4
K8	Spending time in the building that has poor indoor air quality can cause the sick building syndrome (acute ill health and discomfort) among the occupants.	312	98.4	5	1.6
K9	Fire extinguisher class A is designed for the flammable liquid fires.	135	42.6	182	57.4
K10	A clean and well-maintained mechanical ventilation or air-conditioning can encourage the growth of bacteria and other organisms.	251	79.2	66	20.8

4.4 Proportion of Knowledge on OSH among Office Workers in Public Universities in Malaysia

Table 4.4 shows the level of knowledge among the respondents. In this study, majority (225 or 71.0%) of the respondents had good knowledge on OSH, while (92 or 29.0%) had poor knowledge on OSH.

Table 4.4: Proportion of knowledge on OSH among office workers in public universities in Malaysia. (N=317)

Proportion of knowledge on OSH among Office Workers							
Variable	Good (%)	Poor (%)	Range	Min	Max	Mean±sd	Median+IQR
Knowledge score	225(71)	92(29)	6.00	4.00	10.00	8.09±1.27	8.00+2

Median was a cut off point for poor and good knowledge (Rosliza et al., 2015).

4.5 Awareness on OSH among Office Workers in Public Universities in Malaysia

Table 4.5 shows the distribution answer for the 4 Likert scale question related to awareness on OSH. Most of the respondents (194 or 61.2%) agree that they felt free to voice concerns or make suggestions about workplace health and safety at their job. Majority of the respondents (255 or 71.0%) agreed that they knew the necessary safety precautions they should take while doing their job. Additionally, (216 or 68.1%) of respondents were cleared about their and their employers' rights and responsibilities in relation to workplace health and safety. Over half of the respondents (170 or 53.6%) agreed that workplace health and safety is at least as important as production and quality. Apart from that, (207 or 65.3%) of the respondents knew how to perform their job in a safe manner. Besides that, (192 or 60.6%) of respondents agreed that if they became aware of a health or safety hazard at their workplace, they know who (at their workplace) they would report it to. Many of the respondents (196 or 61.8%) have the knowledge to assist in responding to any health and safety concerns at their workplace and they consider that safety inspection helps to find serious hazards. Over half of the respondents (186 or 58.7%) agreed that there was adequate safety training in their workgroup. Lastly, (173 or 54.6%) of the respondents aware and agreed that they can stop work if they think something is unsafe and management will not put the blame on them

Table 4.5: Awareness on OSH among office workers in public universities in Malaysia. (N=317)

No.	Awareness on OSH	Strongly disagree		Disagree		Agree		Strongly agree	
		n	%	n	%	n	%	n	%
A1	I feel free to voice concerns or make suggestions about workplace health and safety at my job	14	4.4	11	3.5	194	61.2	98	30.9
A2	I know what the necessary safety precautions that I should take while doing my job.	11	3.5	7	2.2	255	71.0	74	23.3
A3	I am clear about my and the employers' rights and responsibilities in relation to workplace health and safety.	11	3.5	16	5.0	216	68.1	74	23.3
A4	I feel workplace health and safety is considered to be at least as important as production and quality.	15	4.7	4	1.3	170	53.6	128	40.4
A5	I know how to perform my job in a safe manner.	12	3.8	3	0.9	207	65.3	95	30.0
A6	If I became aware of a health or safety hazard at my workplace, I know who (at my workplace) I would report it to.	13	4.1	6	1.9	192	60.6	106	33.4
A7	I have the knowledge to assist in responding to any health and safety concerns at my workplace.	11	3.5	78	24.6	196	61.8	32	10.1

A8	We who work here consider that safety inspection help find serious hazards.	9	2.8	19	6.0	196	61.8	93	29.3
A9	There is adequate safety training in my workgroup.	17	5.4	89	28.1	186	58.7	25	7.9
A10	I can stop work if I think something is unsafe and management will not put the blame on me.	14	4.4	86	27.1	173	54.6	44	13.9



4.6 Proportion of Awareness on OSH among Office Workers in Public Universities in Malaysia

Table 4.6 shows the level of awareness among the respondents. In this study, majority (196 or 61.8%) of the respondents had good awareness on OSH, while (121 or 38.2%) had poor awareness on OSH.

Table 4.6: Proportion of awareness on OSH among office workers in public universities in Malaysia. (N=317)

Proportion of awareness on OSH among Office Workers							
Variable	Good (%)	Poor (%)	Range	Min	Max	Mean±sd	Median+IQR
Awareness score	196 (61.8)	121 (38.2)	30.00	10.00	40.00	30.61±5.02	30.00+4.50

Median was a cut off point for poor and good awareness (Rosliza et al., 2015).

4.7 Practice on OSH among Office Workers in Public Universities in Malaysia

Table 4.7 shows the answer the 5 Likert scale question related to practice on OSH. Only (35 or 11.0%) reported that they never work in a bent, twisted, or awkward work posture. Many of the respondents (124 or 39.1%) often do repetitive movements with their hands or wrists (packing, sorting, assembling, cleaning, pulling, pushing, typing) for at least 3 hours during the day. There was (14 or 4.4%) that never point out to the management if they notice a workplace accident. Most of the respondents (191 or 60.3%) will not remain silent anything if their work environment was unsafe, and hope that the situation eventually improves. Over half of the respondents (175 or 55.2%) claimed that they had enough time to complete their work tasks safely. There was (5 or 1.6%) of the respondents that never discuss on safety issues when such issues come up. Only (49 or 15.5%) of respondents who always attend health and safety campaign/ courses when it is conducted by their organization. (127 or 40.1%) of the respondents reported that their supervisor often consults with them regularly about workplace safety issues. Apart from that, (130 or 41.0%) of the respondents stated that recognition was never given to employees who work safely in their workgroup. Lastly, (154 or 48.6%) of the respondents claimed that unsafe conditions were often corrected in their work area.

Table 4.7: Practice on OSH among office workers in public universities in Malaysia. (N=317)

No.	Practice on OSH	Never		Rarely		Sometimes		Often		Always	
		n	%	n	%	n	%	n	%	n	%
P1	I work in a bent, twisted or awkward work posture	35	11.0	88	27.8	152	47.9	34	10.7	8	2.5
P2	I do repetitive movements with your hands or wrists (packing, sorting, assembling, cleaning, pulling, pushing, typing) for at least 3 hours during the day.	14	4.4	41	12.9	73	23.0	124	39.1	65	20.5
P3	I will point it out to the management if I notice a workplace accident	14	4.4	27	8.5	45	14.2	110	34.7	121	38.2
P4	I would not say anything if my work environment was unsafe, and hope that the situation eventually improves	191	60.3	77	24.3	34	10.7	8	2.5	7	2.2
P5	I have enough time to complete my work tasks safely	1	0.3	10	3.2	46	14.5	175	55.2	85	26.8
P6	We always discuss on safety issues when such issues come up	5	1.6	41	12.9	94	29.7	123	38.8	54	17.0

P7	I always attend health and safety campaign/ courses when it is conducted by my organization	16	5.0	57	18.0	103	32.5	92	29.0	49	15.5
P8	My supervisor consults with employees regularly about workplace safety issues	17	5.4	48	15.1	84	26.5	127	40.1	41	12.9
P9	Recognition is given to employees who work safely in my workgroup	130	41.0	78	24.6	66	20.8	31	9.8	12	3.8
P10	Unsafe conditions are promptly corrected in my work area	3	0.9	22	6.9	78	24.6	154	48.6	60	18.9

4.8 Proportion of Practice on OSH among Office Workers in Public Universities in Malaysia

Table 4.8 shows the level of practice on OSH among the respondents. In this study, (162 or 51.1%) of the respondents had good practice on OSH, while (155 or 48.9%) had poor practice on OSH.

Table 4.8: Proportion of practice on OSH among office workers in public universities in Malaysia. (N=317)

Proportion of practice on OSH among Office Workers							
Variable	Good (%)	Poor (%)	Range	Min	Max	Mean±sd	Median+IQR
Practice score	162(51.1)	155(48.9)	29.00	20.00	49.00	34.29±5.11	35.00+7

Median was a cut off point for poor and good practice (Rosliza et al., 2015).

4.9 Association between Knowledge with Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.9 shows the association between the level of knowledge with sociodemographic, occupational background and safety management at the workplace. In this study, it shows that level of knowledge was associated with the safety inspection at workplace. Knowledge on OSH was good among respondents (73.0%) that were working at the workplace that have safety inspection compared to respondents (53.1%) which were working at the workplace where there is no safety inspection. There was a statistical significance between the safety inspection at workplace and the level of knowledge on OSH ($X^2=5.507$, $p\text{-value}=0.019$)

Table 4.9: Association between knowledge with sociodemographic, occupational background and safety management among office workers in public universities in Malaysia. (N=317)

Factors	Level of Knowledge on OSH		X ² /Fisher Exact	P-Value	
	Good, n=225	Poor, n=92			
Sociodemographic Information					
Age	<35	98(73.7)	35(26.3)	0.815	0.367 ^a
	>35	127(69.0)	57(31.0)		
Gender	Male	76(67.3)	37(32.7)	1.180	0.277 ^a
	Female	149(73.0)	55(27.0)		
Ethnicity	Malay	213(70.8)	88(29.2)	1.000 ^b	
	Non-Malay	12(75.0)	4(25.0)		
	Malay				

Educational Background	Secondary education	42(72.4)	16(27.6)	0.071	0.790 ^a
	Tertiary education	183(70.7)	76(29.3)		

Occupational Background

Respondent classification	Certified university	99(76.2)	31(23.8)	2.866	0.090 ^a
	Non-certified university	126(67.4)	61(32.6)		

Length of Service	>12 years	114(69.1)	51(30.9)	0.595	0.441 ^a
	<12 years	111(73.0)	41(27.0)		

Employment Status	Permanent	178(70.1)	76(29.9)	0.502	0.479 ^a
	Others	47(74.6)	16(25.4)		

Received safety training	No	22(59.5)	15(40.5)	2.698	0.100 ^a
	Yes	203(72.5)	77(27.5)		

Safety Management

Availability of safety policy at workplace	No	20(69.0)	9(31.0)	0.063	0.802 ^a
	Yes	205(71.2)	83(28.8)		

Availability of safe work procedure	No	7(77.8)	2(22.2)		1.000 ^b
	Yes	218(70.8)	90(29.2)		

Involvement in safety discussion	No	70(68.6)	32(31.4)	0.403	0.525 ^a
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and decision
making

	Yes	155(72.1)	60(27.9)		
Safety	No	17(53.1)	15(46.9)	5.507	0.019 ^{a*}
inspection at workplace	Yes	208(73.0)	77(27.0)		
Presence of Safety Committee at Workplace	No	6(50.0)	6(50.0)		0.114 ^b
	Yes	219(71.8)	86(28.2)		
Management commitment in OSH	No	8(61.5)	5(38.5)		0.533 ^b
	Yes	217(71.4)	87(28.6)		

*Significant at P < 0.05

^aChi Square Test

^bFisher's Exact Test

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.10 Association between Awareness with Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.10 shows the association between level of awareness with sociodemographic, occupational background and safety management at the workplace. In this study, it shows that level of awareness was associated educational background. The respondents (64.5%) with tertiary educational background had higher awareness score than those with secondary educational background. There was statistically significant association between the educational background and the awareness on OSH ($X^2=4.209$, $p\text{-value}=0.040$); see table 4.10.

In addition, there was statistically significant association between the respondent classification with the awareness on OSH ($X^2=7.462$, $p\text{-value}=0.006$). The respondents (70.8%) who are working at certified university had higher awareness score than those (55.6%) who are working at non-certified university; see table 4.10.

Moreover, respondents (64.9%) that working at the university where safety policy is available had higher awareness score than those (31.0%) who were working at the university where safety policy is not available ($X^2=12.826$, $p\text{-value}=0.001$); see table 4.10.

This study also has showed there is a statistically significant between involvement in safety discussion and decision making with the level of awareness ($X^2=12.119$, $p\text{-value}=0.001$). Respondents (68.4%) that involve in safety discussion

and decision making tend to have higher awareness score than respondent (48.0%) who do not involve in safety discussion and decision making; see table 4.10.

Furthermore, respondents (63.5%) who were working at the workplace where the management gave commitment towards OSH would have higher awareness score than those who were working at the workplace where there was no commitment given by management towards OSH (p-value=0.006);; see table 4.10.

Table 4.10: Association between awareness with socio demographic, occupational background, and safety management among office workers in public universities in Malaysia. (N=317)

Factors	Level of Awareness on OSH		X ² / Fisher Exact	P-Value	
	Good, n=196	Poor, n=121			
Sociodemographic Information					
Age	<35	88(66.2)	45(33.8)	1.825	0.177 ^a
	>35	108(58.7)	76(41.3)		
Gender	Male	72(63.7)	41(36.3)	0.265	0.607 ^a
	Female	124(60.8)	80(39.2)		
Ethnicity	Malay	182(60.5)	119(39.5)	0.705	0.300 ^a
	Non-Malay	14(87.5)	2(12.5)		
Educational Background	Secondary education	29(50.0)	29(50.0)	4.209	0.040 ^{a*}
	Tertiary education	167(64.5)	92(35.5)		
Occupational Background					
Respondent classification	Certified university	92(70.8)	38(29.2)	7.462	0.006 ^{a*}

	Non-certified university	104(55.6)	83(44.4)		
Length of Service	>12 years	98(59.4)	67(40.6)	0.865	0.352 ^a
	<12 years	98(64.5)	54(35.5)		
Employment Status	Permanent	153(60.2)	101(39.8)	1.375	0.241 ^a
	Others	43(68.3)	20(31.7)		
Received safety training	No	19(51.4)	18(48.6)	1.949	0.163 ^a
	Yes	117(63.2)	103(36.8)		
Safety Management					
Availability of safety policy at workplace	No	9(31.0)	20(69.0)	12.826	0.001 ^{a*}
	Yes	187(64.9)	101(35.1)		
Availability of safe work procedure	No	3(33.3)	6(66.7)		0.090 ^b
	Yes	193(62.7)	115(37.3)		
Involvement in safety discussion and decision making	No	49(48.0)	53(52.0)	12.119	0.001 ^{a*}
	Yes	147(68.4)	68(31.6)		
Safety inspection at workplace	No	16(50.0)	16(50.0)	2.111	0.146 ^a
	Yes	180(63.2)	105(36.8)		

Presence of Safety Committee at Workplace	No	7(58.3)	5(41.7)	0.772 ^b
	Yes	189(62.0)	116(38.0)	
Management commitment in OSH	No	3(23.1)	10(76.9)	0.006 ^{b*}
	Yes	193(63.5)	111(36.5)	

*Significant at $P < 0.05$

^aChi Square Test

^bFisher's Exact Test

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.11 Association between Practice with Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.11 shows the association between level of practice with the occupational background and safety management. It shows that the practice on OSH was associated with the respondent classification; the respondent from certified university (60.0%) had higher practice score than those (44.9%) from non-certified university. There was statistically significant between the respondent classification and the practice on OSH ($X^2=6.979$, $p\text{-value}=0.008$).

In addition, the respondents that (53.5%) that working at the university where safety policy is available had higher practice score than those (27.6%) who were working at the university where safety policy is not available ($X^2=7.065$, $p\text{-value}=0.008$); see table 4.11.

Furthermore, there was statistically significant association between the OSH practice and the availability of safe work procedure at workplace ($p\text{-value}=0.018$). The respondents (52.3%) tend to have high practice score when there is safe work procedure available at the workplace as if compare with the who (11.1%) are working without safe work procedure; see table 4.11.

Moreover, this study also has showed there is a statistically significant association between the level of OSH practice and the involvement in safety discussion and decision making ($X^2=13.236$, $p\text{-value}=0.001$). Respondents (58.1%) that involve in safety discussion and decision making tend to have higher practice score than

respondent (36.3%) who do not involve in safety discussion and decision making; see table 4.11.

Apart from that, practice on OSH among the respondents have been significantly associated with the availability of safety inspection at the workplace ($X^2=12.169$, $p\text{-value}=0.001$). Respondents (54.4%) have higher practice score when safety inspection is available at the workplace compare with those who (21.9%) are working at the workplace where the safety inspection is unavailable; see table 4.11.

Besides that, practice on OSH among respondent was found to be significantly associated with the management commitment towards OSH ($X^2=4.621$, $p\text{-value}=0.039$). The respondents (52.3%) tend to get high practice score when there is a commitment given by the management in OSH compared to those respondents (23.1%) that working at the workplace where the management do not give the commitment in OSH; see table 4.11.

Table 4.11: Association between practice with sociodemographic, occupational background and safety management among office workers in public universities in Malaysia. (N=317)

Factors	Level of Practice on OSH		X ² / Fisher Exact	P-Value	
	Good, n=162	Poor, n=155			
Sociodemographic Information					
Age	<35	71(53.4)	62(46.6)	0.476	0.490 ^a
	>35	91(49.5)	93(50.5)		
Gender	Male	56(49.6)	57(50.4)	0.168	0.682 ^a
	Female	106(52.0)	98(48.0)		

Ethnicity	Malay	153(50.8)	148(49.2)	0.179	0.673 ^a
	Non-Malay	9(56.3)	7(43.8)		
Educational Background	Secondary education	23(39.7)	35(60.3)	3.724	0.054 ^a
	Tertiary education	139(53.7)	120(46.3)		

Occupational Background

Respondent classification	Certified university	78(60.0)	52(40.0)	6.979	0.008 ^{a*}
	Non-certified university	84(44.9)	103(55.1)		
Length of Service	>12 years	79(47.9)	86(52.1)	1.433	0.231 ^a
	<12 years	83(54.6)	69(45.4)		
Employment Status	Permanent	129(50.8)	125(49.2)	0.051	0.821 ^a
	Others	33(52.4)	30(47.6)		
Received safety training	No	17(45.9)	20(54.1)	0.466	0.504 ^a
	Yes	145(51.8)	135(48.2)		

Safety Management

Availability of safety	No	8(27.6)	21(72.4)	7.065	0.008 ^{a*}
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policy at workplace	Yes	154(53.5)	134(46.5)		
Availability of safe work procedure	No	1(11.1)	8(88.9)		0.018 ^{b*}
	Yes	161(52.3)	147(47.7)		
Involvement in safety discussion and decision making	No	37(36.3)	65(63.7)	13.236	0.001 ^{a*}
	Yes	125(58.1)	90(41.9)		
Safety inspection at workplace	No	7(21.9)	25(78.1)	12.169	0.001 ^{a*}
	Yes	155(54.4)	130(45.6)		
Presence of Safety Committee at Workplace	No	5(41.7)	7(58.3)	0.455	0.505 ^a
	Yes	157(51.5)	148(48.5)		
Management commitment in OSH	No	3(23.1)	10(76.9)	4.261	0.039 ^{a*}
	Yes	159(52.3)	145(47.7)		

*Significant at P <0.05

^aChi Square Test

^bFisher's Exact Test

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.12 Hierarchical Logistic Regression on Knowledge and Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.12 shows there is no factors might be the significant predictor for knowledge on OSH.

Table 4.12: Hierarchical logistic regression on knowledge and sociodemographic, occupational background and safety management among office workers in public universities in Malaysia. (N=317)

Variable		Poor Knowledge			
		B	Standard Error	P-Value	Odds Ratio (OR) (95% Confidence Interval, CI)
Age (>35 ^a)	<35	-0.190	0.361	0.598	0.827 (0.41-1.68)
Gender (<i>Male</i> ^a)	Female	-0.201	0.273	0.460	0.818 (0.48-1.40)
Ethnicity (<i>Non-Malay</i> ^a)	Malay	-0.122	0.647	0.850	0.885 (0.25-3.14)
Educational Background (<i>Secondary education</i> ^a)	Tertiary education	0.257	0.346	0.458	1.293 (0.66-2.55)
Respondent classification (<i>Noncertified university</i> ^a)	Certified university	-0.311	0.296	0.292	0.732 (0.41-1.31)
Length of Service (<12 years ^a)	>12 years	-0.044	0.374	0.907	0.957 (0.46-1.99)
Employment Status (<i>Others</i> ^a)	Permanent	0.342	0.394	0.386	1.407 (0.65-3.05)

Received safety training (<i>No^a</i>)	Yes	-0.652	0.398	0.101	0.521 (0.24-1.14)
Availability of safety policy at workplace (<i>No^a</i>)	Yes	0.225	0.506	0.656	1.253 (0.47-3.38)
Availability of safe work procedure (<i>No^a</i>)	Yes	0.450	0.861	0.601	1.569 (0.29-8.48)
Involvement in safety discussion and decision making (<i>No^a</i>)	Yes	0.085	0.301	0.777	1.089 (0.60-1.97)
Safety inspection at workplace (<i>No^a</i>)	Yes	-0.713	0.437	0.103	0.490 (0.21-1.16)
Presence of Safety Committee at Workplace (<i>No^a</i>)	Yes	-0.711	0.668	0.287	0.491 (0.13-1.82)
Management commitment in OSH (<i>No^a</i>)	Yes	0.270	0.728	0.710	1.310 (0.32-5.45)

*Significant at $P < 0.05$

^a Reference

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.13 Hierarchical Logistic Regression on Awareness and Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.13 revealed that the respondents with tertiary education background is 50.8% less likely to have poor awareness on OSH (OR=0.492, 95% CI: 0.260-0.950), compared to respondent with secondary education background. Additionally, office workers who are working at the workplace where safety policy is available 66.6% less likely to have poor awareness on OSH compared to those who were working at the workplace where safety policy is unavailable (OR=0.334, 95% CI: 0.127-0.883).

Table 4.13: Hierarchical logistic regression on awareness and sociodemographic, occupational background and safety management among office workers in public universities in Malaysia. (N=317)

Variable		Poor Awareness			
		B	Standard Error	P-Value	Odds Ratio (OR) (95% Confidence Interval, CI)
Age (>35 ^a)	<35	-0.385	0.356	0.280	0.680 (0.34-1.37)
Gender (<i>Male</i> ^a)	Female	0.537	0.278	0.053	1.710 (0.99-2.95)
Ethnicity (<i>Non-Malay</i> ^a)	Malay	1.573	0.838	0.060	4.821 (0.93-24.89)
Educational Background (<i>Secondary education</i> ^a)	Tertiary education	-0.710	0.334	0.034*	0.492 (0.260-0.950)
Respondent classification	Certified university	-0.335	0.282	0.235	0.715 (0.41-1.24)

(Noncertified
university^a)

Length of Service (<12 years ^a)	>12 years	-0.239	0.364	0.512	0.788 (0.39-1.61)
Employment Status (Others ^a)	Permanent	0.231	0.385	0.549	1.260 (0.59-2.68)
Received safety training (No ^a)	Yes	-0.043	0.409	0.916	0.958 (0.43-2.13)
Availability of safety policy at workplace (No ^a)	Yes	-1.096	0.495	0.027*	0.334 (0.127-0.883)
Availability of safe work procedure (No ^a)	Yes	-0.678	0.857	0.429	0.508 (0.10-2.72)
Involvement in safety discussion and decision making (No ^a)	Yes	-0.492	0.283	0.082	0.611 (0.35-1.07)
Safety inspection at workplace (No ^a)	Yes	-0.124	0.469	0.792	0.883 (0.35-2.21)
Presence of Safety Committee at Workplace (No ^a)	Yes	0.379	0.715	0.596	1.461 (0.36-5.93)
Management commitment in OSH (No ^a)	Yes	-1.486	0.829	0.073	0.226 (0.05-1.15)

*Significant at P <0.05

^{a/b} Reference

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

4.14 Hierarchical Logistic Regression on Practice and Sociodemographic, Occupational Background and Safety Management among Office Workers in Public Universities in Malaysia

Table 4.14, it shows the respondents who are working at the workplace where safety inspection is available is 68.3% less likely to have poor practice on OSH (OR= 95%, CI: 0.120-0.840) compared to the respondents that are working at the workplace where safety inspection is unavailable.

Table 4.14: Hierarchical logistic regression on practice and sociodemographic, occupational background and safety management among office workers in public universities in Malaysia. (N=317)

Variable		Poor Practice			Odds Ratio (OR) (95% Confidence Interval, CI)
		B	Standard Error	P-Value	
Age (>35 ^a)	<35	0.157	0.342	0.645	1.171 (0.60-2.29)
Gender (Male ^a)	Female	0.230	0.266	0.386	1.259 (0.75-2.12)
Ethnicity (Non-Malay ^a)	Malay	0.164	0.606	0.787	1.178 (0.36-3.86)
Educational Background (Secondary education ^a)	Tertiary education	-0.601	0.328	0.067	0.548 (0.29-1.04)
Respondent classification (Noncertified university ^a)	Certified university	-0.422	0.272	0.121	0.656 (0.39-1.12)
Length of Service (<12 years ^a)	>12 years	0.192	0.354	0.587	1.212 (0.61-2.43)

Employment Status	Permanent	-0.038	0.356	0.914	0.962
	(Others ^a)				(0.48-1.93)
Received safety training	Yes	0.154	0.402	0.703	1.166
	(No ^a)				(0.53-2.57)
Availability of safety policy at workplace	Yes	-0.191	0.514	0.710	0.826
	(No ^a)				(0.30-2.26)
Availability of safe work procedure	Yes	-1.578	1.131	0.163	0.206
	(No ^a)				(0.02-1.89)
Involvement in safety discussion and decision making	Yes	-0.498	0.281	0.077	0.608
	(No ^a)				(0.35-1.06)
Safety inspection at workplace	Yes	-1.150	0.499	0.021*	0.317
	(No ^a)				(0.12-0.84)
Presence of Safety Committee at Workplace	Yes	0.662	0.731	0.365	1.939
	(No ^a)				(0.46-8.12)
Management commitment in OSH	Yes	0.243	0.860	0.777	1.275
	(No ^a)				(0.24-6.88)

*Significant at P < 0.05

^{a/b} Reference

Certified university of ISO45001:2018 UMK, UMS, UIA

Non-certified university of ISO45001:2018 UUM, UTEM, UPSI, UKM

CHAPTER 5

DISCUSSION

5.1 Sociodemographic Information and Occupational Background

Out of 346 distributed questionnaires, only 317 questionnaires were answered with 91.6% response rate. The youngest respondent that recruited in this study was 22 years old while the oldest was 58 years old. The mean age of the respondent was $37.92 \pm (SD)7.49$ years and the majority (166 or 52.3%) of the respondent falls into the age category of 36 to 51 years old. As for the gender, the majority (204 or 64.4 %) of the respondents were female. This finding might be supported by ILO (2020) as it stated that most 61% of female workers tend to work as clerical support workers. Generally, the clerical support workers were those who performing administrative work, sorting, and filing documents. In terms of ethnicity, the majority (301 or 95.0%) of the respondents were Malay. Malay respondents might be the majority as Department of Statistic Malaysia (2020) reported that 69.6% of the Malaysian citizen was in the Malay group, 22.6% were in Chinese group, 6.8% were in Indian group, and 1.0% were in others group. For the educational background, majority (259 or 81.7%) of the respondent received the tertiary education. In contrast with Nyabuto et al., (2020), there was only 23.60% of the respondents were having tertiary educational background, meanwhile 49.30% of the respondents were having secondary educational background and the rest were having primary education level. Majority (187 or 59%) of the respondents are working at the non-certified university. Number of respondents from non-certified university may be higher than those from certified

university because there were four non-certified universities and three certified university selected for this study.

Additionally, there were very limited public universities that have been certified with ISO45001:2018. Besides that, (149 or 47%) of the respondents have 11-20 years working experiences at the university with the mean of $12.12 \pm (SD) 6.93$ years. In term of employment status, majority (254 or 80.1%) respondents were working permanently at the university. This finding is likely similar with J.O. et al. (2018) since most of their respondents were permanent staff working at the public university in Malaysia. Most (280 or 88.3%) of the respondents have received the safety training at the university. The workers were attending various kind of safety training including first aid training, emergency response training, ergonomic training as well as mental health training. Hence, this indicate that the universities management were complying with the OSHA 1994 section 15(2)(c).

5.2 Safety Management Practice at Workplace

Majority of the respondents (90.9%) were working at the workplace where safety policy is available. Establishment and revision of safety policy at the workplace was one of the employer responsibilities based on OSHA 1994 Section 16. Most of the respondents (97.2%) had been working at the workplace where safe work procedure is available. Over half of the respondents (67.8%) have been involve in the safety discussion and decision making at the workplace. According to Tsao et al. (2017), employee engagement is an effective method to promote proactive safety management practice at the workplace. (89.9%) of the respondents were working at the place where the safety inspection is undertaken at the workplace. Majority of the

respondents (96.2%) state that there is a presence of safety committee at workplace. According to OSHA 1994 Section 30(1)(a), every employer shall establish a safety and health committee at the place of work in accordance with this section if there are forty or more persons employed at the workplace. (95.9%) of the respondents claimed that the management have given a commitment towards OSH at the workplace. The experience of respondents revealed that management's dedication to safety creates motivation throughout the organization (Eskandari et al., 2017).

5.3 Knowledge on OSH

In this study, 71.0% of the respondent had a good knowledge on OSH. The outcome of this study is in contrast with the study by J.O., et al (2018) which only 27.5% of the respondents are having a good knowledge. Finding of this study may suggests that majority of the office workers are getting adequate safety training as Goswami et al., (2011) found that level of knowledge among the paramedical staff is improved after received safety training. Nevertheless, the result of this study also has confirmed that some of the office workers still need to improve their OSH knowledge. Therefore, the university need to encourage the workers to participate in the safety training as with effective trainings it could motivate and provide proper knowledge to the workers in performing their job tasks (Zakaria et al., 2012).

5.4 Factor Associated with Knowledge on OSH

In this study, it shows that the availability of safety inspection at the workplace have a statistically significant with the OSH knowledge among the workers. Inspection

is a typical component of safety management systems, and it helps to control dangers by detecting and correcting problems at the early stage (Woodcock, 2013). Safety inspection will allow the workers to improve their knowledge as they will know how to perform tasks in safe manner. This might be happened as the management informed the workers about the potential hazard of their job task as well as provide them with the proper control measure. The safety inspection is crucial as the previous study state that after performing workplace inspection, there is a reduction in term of incident that involve absence from work, job restriction as well as job transfers (Li & Singleton, 2018).

5.5 Awareness on OSH

In this study, it shows that 61.8% of the respondents are having a good awareness towards OSH. Good awareness among the workers toward OSH will result in efficient and successful work process as well as minimizing the work-related accident (Mukhtar et al., 2020). OSH education and training attempts to increase OSH awareness and the ability to recognize hazards, expand knowledge of the causes of disease, injury, and accident, and encourage the adoption of preventative measures (Lindholm et al., 2019). Previous study that conducted among the construction workers have suggest that if the awareness of occupational risk increase, the probability of occupational accident will be decreased (Fauzania et al., 2019).

5.6 Factors Associated with Awareness on OSH

This study showed that there is significant association between awareness on OSH and the respondent classification. Respondents from certified university of ISO 45001:2018 had higher good awareness than respondent from non-certified university. According to Jannah et al. (2020), organizations that use ISO 45001:2018 system can enhance awareness of risks and hazards at the workplace for all workers and everyone involved in the organization. Despite of enhance the awareness towards OSH, this system is reported to decrease work-related accidents, increase employee satisfaction, decrease expenditures associated with accidents and occupational illnesses, and improvement in the quality of the goods and services delivered (Morgado et al., 2019). The organizations seem to significantly grow when it has the certification of ISO 45001:2018 (Campailla et al., 2019). The organization may use this system to assess the effectiveness of their occupational health and safety management system in their workplace and make continual improvements.

Additionally, OSH awareness is also significant with the availability of safety policy at workplace. Safety policy is a plan and commitment, as well as the measures put in place, to raise worker awareness of the dangers associated with their jobs and the role of each individuals need to perform at work in order to promote safe working conditions (Ogundipe et al., 2018). Even the workers did not recognize the member or responsibilities of safety committee, the workers still able to determine the possible hazard at workplace when they are having a good awareness on safety policy (Ramli et al., 2019). Other than that, the significant association was found between the awareness on OSH with the education background among the respondents.

Respondent that has a tertiary education level tend to have higher awareness compared to those who have a secondary education level. The lower the educational level, the less they recognize the of safety issue, the more difficult to train them in safety training, the more difficult to train them in safety awareness, and the worse the training results will be, the harder they will feel the importance of safety awareness (Ying Lu & Xingdong, 2011, as cited in Gang et al., 2012). The level of education is one of the critical factors in determining the risk perception level among the workers (Ersoz & Bulut, 2021).

The significant association also has been found between the OSH awareness with the management commitment, involvement of employees in safety discussion and decision making. Safety discussions provide an opportunity to the workers to discuss and resolving issues discovered during safety inspections and hazard identification (Tse, S. L., 2005, as cited in Mendis et al., 2016). Apart from that, including workers in the decision-making process may not only empowers them to contribute to an organization's success, but it also saves the firm time and money through higher productivity and less outsourcing (Anderson, C., 2018, as cited in Mina et al., 2019). The structural models' by Yang et al., (2017) demonstrated that these two major organizational factors which include management commitment and employee involvement have a significant impact on employee safety awareness and practice.

5.7 Practice on OSH

Current study shows that the respondent with good practice on OSH was only 51.1%. This finding is likely similar with Mukhtar et al., (2020) which 48.6% of the

respondents are having a good practice towards OSH. Somehow, this indicate that practice towards OSH is crucial to be improve since Burke (2013), has reported that poor OSH practice and government monitoring have led to 1127 fatalities due to the collapsed of Rana Plaza at Bangladesh. The proportion for the practice on OSH in this study seem to be encouraging but still low. Therefore, it is a need to increase the level of practice since it can help to reduce the number of accidents. The knowledge and safety practice are crucial because they may help to establish a safe working environment (Hassan et al., 2017).

5.8 Factors Associated with Practice on OSH

This study found that there is statistically significant between the respondent classification, safety policy, safe work procedure with the practice on OSH. University that certified by ISO45001:2018 more likely to have a worker that are having higher practice on OSH compared to workers from non-certified university. ISO45001:2018 is the requirement for occupational health and safety (OH&S) management system. This management system will allow the organization to create safe and healthy workplaces by proactively improving their OH&S performance and reducing work-related injury and illness. According to Ramos et al. (2020), overall performance for an organization will be improved when the OH&S management system is matured, and the practices are applied.

Besides that, this study also indicates that there is a significant association between OSH practice and the availability of safe work procedure at workplace. Previous study has stated that accident which happened at the high-risk region, is

demanding for a significant precaution in terms of safe work procedures. Incompliance of safety practices or a lack of safe work practices have contributed to 92% of accident for the construction sectors (Asari & Leman, 2020). Thus, the safe work procedures are created to offer the procedures needed to safely conduct the tasks without causing injury and disease (Wachter & Yorio, 2014). According to Abdul Rahman (2016), Hazard Identification, Risk Assessment and Risk Control (HIRARC) may act as a reference and guideline for workers to refer before performing any duties. It is a documented safe work procedure for diverse jobs that includes information such as identification of hazard, risk assessments, and recommendation for control measures that workers must follow to ensure their safety.

Furthermore, the involvement of workers in safety discussion and decision making have also significantly associated with the OSH practice. In order to achieve a high proportion of workplace safety practice, the engagement of employees need to be improved (Mohammadfam et al., 2017). Leaders should include all employees in health and safety discussions, funding decisions, training workers to take preventive measures, and implementing healthy and safe procedures (Motta F.A., 2012, as cited in May et al., 2019). Moreover, this study shows there is significant association between OSH practice and management commitment in OSH. The finding is similar with Raudhah & Hayati Habibah (2016) as the analysis from the study indicates that management commitment have significant relationship with safety practices. Previous study has stated that, due to the lack of management commitment and the ignorance of safety, it has led to the poor safety practice among the workers which resulting in higher accident rate (Zahoor et al., 2016). Therefore, the management should give such a good commitment toward OSH because it may protect the employees and the

employer itself. Lastly, this study shows that there is a significant association between practice and availability of safety inspection at the workplace. Inspections are required to thoroughly investigate all aspects that have the potential to cause harm or sickness, and to determine where action is required to mitigate risks (Arjunan et al., 2020). When there is a safety inspection conducted at the workplace, the unsafe condition at the workplace will be promptly corrected as to minimize the risk.

5.9 Predictor of KAP on OSH

5.9.1 Predictor of Knowledge on OSH

In this study, there is no predictor for knowledge on OSH have been found. However, there are factor found to be statistically significant predictor for awareness and practice on OSH include three independent variables, namely: educational background, aware on the availability of safety policy at workplace and availability of safety inspection at the workplace.

5.9.2 Predictor of Awareness on OSH

The result revealed that respondents with tertiary education background is 50.8% less likely to have poor awareness on OSH compared to respondent with secondary education background. Previous study might support this finding as Othman et al. (2017) revealed that production workers with a low educational background contribute to safety and health problems. He added that occupational accidents have grown more common as a result of a lack of safety awareness in the workplace. Other finding has found that, Chinese construction workers with a greater educational

background have a higher level of safety awareness meanwhile those Chinese construction workers with a low educational background had a low level of safety awareness and had more safety occurrences (Zhang & An, 2012). Apart from that, respondents that aware on the availability of safety policy at the workplace is 66.6% less likely to have poor awareness on OSH. This outcome may be supported by Azlin et al. (2017) as they found that only safety policy has a significant positive impact on safety awareness. According to their study, organizations must have a clear safety policy in place in order to raise worker safety awareness. Employees become more aware on safety in the workplace when safety policies and procedures were presented and explained to them (Ibrahim et al., 2012)

5.9.3 Predictor of Practice on OSH

This study revealed that respondents who are working at the workplace where safety inspection is available is 68.3% less likely to have poor practice on OSH compared to the respondents that are working at the workplace that safety inspection is not available. The purpose of a safety inspection is to evaluate the place on a regular basis in order to discover safety concerns and noncompliance of safety regulations and policies (Othman et al., 2020). When there is regular safety inspection conducted, the workers tend to perform their task with a safe practice as the unsafe practice will be corrected throughout the safety inspection. Study by Givehchi et al. (2017) have found that there is a strong link between safety inspection and the safety climate. As a result, data from safety inspections might be utilised as a leading indication of the safety climate and performance.

CHAPTER 6

CONCLUSION AND RECOMMENDATION FOR FUTURE RESEARCH

6.1 Conclusion and Recommendation

In conclusion, the knowledge, awareness, and practice on OSH among office workers in public universities is good in general. However, safety management practice at the workplace might be the pioneer to improve the KAP level among workers. Top management need to give extra attention to office workers that have lower educational background as previous studies indicate that low level of education background might affect them in term of safety. Management of universities can use the result of this study to make such improvement in safety and health at the workplace, as well as support the Occupational Safety and Health Master Plan 2021-2025 (OSHMP25).

This study may fill the study gap as it provided a preliminary data for KAP on OSH among office workers in education sector. The results of this study can be used to improve management effectiveness in safety and health in Malaysian public universities. However, it was difficult to generalize the result to all office workers in public universities in Malaysia due to the limited number of sample and time. The sample was collected from seven public universities out of 20 public universities. For future study, it is suggested to increase the number of sample and include participants

from each of the public universities. Moreover, similar study also can be conducted at the private universities and can compared with the result of current studies.



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APPENDIX II: Self-Administered Questionnaire



KNOWLEDGE, AWARENESS, AND PRACTICE ON OCCUPATIONAL SAFETY AND HEALTH AMONG OFFICE WORKERS IN PUBLIC UNIVERSITIES IN MALAYSIA

PENGETAHUAN, KESEDARAN, DAN AMALAN MENGENAI KESELAMATAN DAN KESIHATAN PEKERJAAN DALAM KALANGAN PEKERJA PEJABAT DI UNIVERSITI AWAM DI MALAYSIA

ID No. :

Date/ Tarikh :

Instructions/ Arahan :

This questionnaire consists of 6 sections:

Borang kaji selidik ini mengandungi 6 bahagian:

- | | |
|-------------------|---|
| Section A | : Sociodemographic Background |
| <i>Bahagian A</i> | <i>: Latar Belakang Sosiodemografi</i> |
| Section B | : Occupational Background |
| <i>Bahagian B</i> | <i>: Latar Belakang Pekerjaan</i> |
| Section C | : Safety Management Practice |
| <i>Bahagian C</i> | <i>: Amalan Pengurusan Keselamatan</i> |
| Section D | : Knowledge On Occupational Safety and Health |
| <i>Bahagian D</i> | <i>: Pengetahuan Terhadap Keselamatan Dan Kesihatan Pekerjaan</i> |
| Section E | : Awareness On Occupational Safety and Health |
| <i>Bahagian E</i> | <i>: Pengetahuan Terhadap Keselamatan Dan Kesihatan Pekerjaan</i> |
| Section F | : Practice On Occupational Safety and Health |
| <i>Bahagian F</i> | <i>: Praktis Terhadap Keselamatan Dan Kesihatan Pekerjaan</i> |

Please answer ALL questions.

Anda diminta untuk menjawab SEMUA soalan.

Please tick your answer for the questions at the provided space.

Untuk menjawab, sila tanda jawapan anda di ruangan yang disediakan.

Please return the questionnaire to the researchers after done answering all questions.

Borang kaji selidik hendaklah dikembalikan kepada penyelidik setelah selesai menjawab semua soalan.

SECTION A: SOCIODEMOGRAPHIC BACKGROUND
BAHAGIAN A: LATAR BELAKANG SOSIODEMOGRAFI

Age/ Umur: _____

Gender

Jantina

Male/ <i>Lelaki</i>	
Female/ <i>Perempuan</i>	

Ethnicity

Bangsa

Malay/ <i>Melayu</i>	
Indian/ <i>India</i>	
Chinese/ <i>Cina</i>	
Others/ <i>Lain-lain</i>	

Educational Background

Latar Belakang Pendidikan

Secondary School	
Diploma	
Degree	

Master	
phD	

SECTION B: OCCUPATIONAL BACKGROUND
BAHAGIAN B: LATAR BELAKANG PEKERJAAN

University/ Universiti:

Job title/ Jawatan: _____

Job Grade/ Gred Kerja: _____

Length of Service/ Tempoh berkhidmat: _____

Employment Status
Status Pekerjaan

Permanent/ Tetap	
Contract/ Kontrak	
Temporary/ Sementara	
Other (please state)/ Lain-lain (sila nyatakan)	

Have you ever received any occupational safety and health training?
Adakah anda pernah mendapat latihan keselamatan dan kesihatan pekerjaan?

Yes/ Ya	
No/ Tidak	

***If yes, what kind of training did you attend?**

***Sekiranya ya, latihan apa yang anda hadiri?**

Fire Safety/ Keselamatan kebakaran		First aid/ Pertolongan cemas	
Emergency Response/ Tindak balas kecemasan		Ergonomics/ Ergonomik	
Mental Health Training/ Latihan Kesihatan Mental		Others (please state) / Lain-lain (nyatakan)	

When did you last attend a training on occupational safety and health?

Bilakah kali terakhir anda mengikuti Latihan keselamatan dan kesihatan pekerjaan?

This year/ <i>Tahun ini</i>		2 years ago/ <i>2 tahun lepas</i>	
Last year/ <i>Tahun lepas</i>		> 2 years ago (please state the year)/ <i>> 2 tahun lepas (nyatakan tahun berkenaan)</i>	



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SECTION C: SAFETY MANAGEMENT PRACTICE
BAHAGIAN C: AMALAN PENGURUSAN KESELAMATAN

1. **Do you know about the occupational safety and health policies at your workplace?**

Adakah anda tahu mengenai polisi keselamatan dan kesihatan pekerjaan di tempat kerja anda?

Yes/ Ya	
No/ Tidak	

2. **Has the company prepared safe work procedures, or specific safety instructions relevant to its operations?**

Adakah syarikat telah menyediakan prosedur operasi yang selamat, atau arahan keselamatan khusus yang berkaitan dengan operasinya?

Yes/ Ya	
No/ Tidak	

3. **Have you been given the opportunity to participate in discussion and involved in decision making related to your safety and health at your workplace?**

Adakah anda diberi peluang untuk menyertai perbincangan dan membuat keputusan berkaitan keselamatan dan kesihatan anda di tempat kerja anda?

Yes/ Ya	
No/ Tidak	

4. **Are there any health and safety inspections undertaken at your workplace?**

Adakah pemeriksaan kesihatan dan keselamatan dilakukan di tempat kerja anda?

Yes/ Ya	
No/ Tidak	

5. **Are you given the opportunity to report occupational safety and health problems to your immediate supervisor?**

Adakah anda diberi kesempatan untuk melaporkan masalah keselamatan dan kesihatan pekerjaan kepada penyelia terdekat anda?

Yes/ Ya	
No/ Tidak	

-
6. **Is there a workplace Health and Safety committee at your workplace?**
Adakah jawatankuasa Kesihatan dan Keselamatan terdapat di tempat kerja anda?

Yes/ <i>Ya</i>	
No/ <i>Tidak</i>	

7. **In your opinion, does management at your workplace play an important role in health and safety?**
Pada pendapat anda, adakah pengurusan di tempat kerja anda memainkan peranan penting dalam kesihatan dan keselamatan?

Yes/ <i>Ya</i>	
No/ <i>Tidak</i>	

8. **In your opinion, is health and safety a strategic concern for the top management?**
Pada pendapat anda, adakah kesihatan dan keselamatan menjadi perhatian strategik bagi pengurusan atasan?

Yes/ <i>Ya</i>	
No/ <i>Tidak</i>	

SECTION D: KNOWLEDGE ON OCCUPATIONAL SAFETY AND HEALTH
BAHAGIAN D: PENGETAHUAN TERHADAP KESELAMATAN DAN KESIHATAN
PEKERJAAN

*Please tick at the appropriate column

No	Question Jawapan	True Benar	False Palsu
1	Safety, health, and welfare of the office workers is being cover under the Occupational Safety and Health Act 1994 <i>Keselamatan, kesihatan, dan kesejahteraan pekerja pejabat dilindungi di bawah Akta Keselamatan dan Kesihatan Pekerjaan 1994</i>		
2	It is noncompulsory to establish Safety and Health Committee in the universities <i>Adalah tidak wajib menubuhkan Jawatankuasa Keselamatan dan Kesihatan di universiti</i>		
3	Information, instruction training and supervision should be provided by the employer to ensure the safety and health of employees <i>Maklumat, latihan instruksi dan penyeliaan harus diberikan oleh majikan untuk memastikan keselamatan dan kesihatan pekerja</i>		
4	Work-related musculoskeletal disorders occur when the physical capabilities of the worker unmatch the physical requirements of the job. <i>Gangguan muskuloskeletal yang berkaitan dengan pekerjaan berlaku apabila kemampuan fizikal pekerja tidak sesuai dengan keperluan fizikal pekerjaan</i>		
5	Workplace social support cannot be considered a valuable tool for preventing work-related stress <i>Sokongan sosial di tempat kerja tidak boleh dianggap sebagai alat yang berharga untuk mencegah tekanan yang berkaitan dengan pekerjaan</i>		
6	Safety data sheet for printing ink and photocopier toner is unnecessary to be kept in work location <i>Lembaran data keselamatan untuk dakwat pencetak dan toner mesin fotokopi tidak perlu disimpan di lokasi kerja</i>		
7	Low humidity can increase the frequency of static electricity shocks <i>Kelembapan rendah dapat meningkatkan frekuensi kejutan elektrik statik</i>		
8	Spending time in the building that has poor indoor air quality can cause the sick building syndrome (acute ill health and discomfort) among the occupants <i>Menghabiskan masa di bangunan yang mempunyai kualiti udara dalaman yang buruk boleh menyebabkan sindrom bangunan yang sakit (kesan kesihatan dan keselesaan yang teruk) di kalangan penghuni</i>		
9	Fire extinguisher class A is designed for the flammable liquid fires <i>Alat pemadam api kelas A khusus untuk kebakaran cecair mudah terbakar</i>		
10	A clean and well-maintained mechanical ventilation or air-conditioning can encourage the growth of bacteria and other organisms. <i>Pengudaraan mekanikal yang bersih dan terawat dengan baik dapat mendorong pertumbuhan bakteria dan organisma lain</i>		

SECTION E: AWARENESS ON OCCUPATIONAL SAFETY AND HEALTH
BAHAGIAN E: PENGETAHUAN TERHADAP KESELAMATAN DAN KESIHATAN
PEKERJAAN

1 = Strongly disagree/ Sangat tidak setuju	3 = Agree/ Setuju
2 = Disagree/ Tidak setuju	4 = Strongly Agree/ Sangat setuju

*Please tick at the appropriate column

No	Question	1	2	3	4
1	I feel free to voice concerns or make suggestions about workplace health and safety at my job <i>Saya bebas untuk menyuarakan kebimbangan atau memberi cadangan mengenai kesihatan dan keselamatan di tempat kerja semasa saya bekerja</i>				
2	I know what the necessary safety precautions that I should take while doing my job <i>Saya tahu apa langkah keselamatan yang perlu saya lakukan semasa menjalankan tugas</i>				
3	I am clear about my and the employers' rights and responsibilities in relation to workplace health and safety <i>Saya jelas mengenai hak dan tanggungjawab saya dan majikan berkaitan dengan kesihatan dan keselamatan di tempat kerja</i>				
4	I feel workplace health and safety is considered to be at least as important as production and quality <i>Saya rasa kesihatan dan keselamatan di tempat kerja dianggap sama pentingnya dengan pengeluaran dan kualiti</i>				
5	I know how to perform my job in a safe manner <i>Saya tahu bagaimana menjalankan tugas dengan selamat</i>				
6	If I became aware of a health or safety hazard at my workplace, I know who (at my workplace) I would report it to <i>Sekiranya saya menyedari bahaya kesihatan atau keselamatan di tempat kerja saya, saya tahu siapa (di tempat kerja saya) saya akan melaporkannya kepada</i>				
7	I have the knowledge to assist in responding to any health and safety concerns at my workplace <i>Saya mempunyai pengetahuan untuk membantu menjawab segala masalah kesihatan dan keselamatan di tempat kerja saya</i>				
8	We who work here consider that safety inspection help find serious hazards <i>Kami yang bekerja di sini menganggap bahawa pemeriksaan keselamatan membantu mencari bahaya yang serius</i>				
9	There is adequate safety training in my workgroup <i>Latihan keselamatan adalah mencukupi dalam kumpulan kerja saya</i>				

10	I can stop work if I think something is unsafe and management will not put the blame on me <i>Saya tahu bahawa saya boleh berhenti bekerja sekiranya saya rasa ada yang tidak selamat dan pengurusan tidak akan menyalahkan saya</i>				
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SECTION F: PRACTICE ON OCCUPATIONAL SAFETY AND HEALTH
BAHAGIAN F: PRAKTIS TERHADAP KESELAMATAN DAN KESIHATAN PEKERJAAN

1 = Never/ Tidak pernah	4 = Often/ Selalu
2 = Rarely/ Jarang	5 = Always/ Sentiasa
3 = Sometimes/ kadang-kadang	

*Please tick at the appropriate column

No	Question	1	2	3	4	5
1	I work in a bent, twisted or awkward work posture <i>Saya bekerja dalam postur badan yang bongkok, bengkok atau canggung</i>					
2	I do repetitive movements with your hands or wrists (packing, sorting, assembling, cleaning, pulling, pushing, typing) for at least 3 hours during the day <i>Saya melakukan pergerakan berulang-ulang dengan tangan atau pergelangan tangan (mengemas, menyusun, memasang, membersihkan, menarik, menolak, menaip) sekurang-kurangnya 3 jam pada siang hari</i>					
3	I will point it out to the management if I notice a workplace accident. <i>Saya akan memaklumkan kepada pihak pengurusan sekiranya saya melihat kemalangan di tempat kerja</i>					
4	I would not say anything if my work environment was unsafe, and hope that the situation eventually improves <i>Saya tidak akan mengatakan apa-apa sekiranya persekitaran kerja saya tidak selamat dan berharap keadaan akhirnya bertambah baik</i>					
5	I have enough time to complete my work tasks safely <i>Saya mempunyai masa yang cukup untuk menyelesaikan tugas kerja saya dengan selamat</i>					
6	We always discuss on safety issues when such issues come up					

	<i>Kami selalu berbincang mengenai masalah keselamatan ketika masalah tersebut timbul</i>					
7	I always attend health and safety campaign/ courses when it is conducted by my organization <i>Saya selalu menghadiri kempen / kursus kesihatan dan keselamatan apabila ianya dijalankan oleh organisasi saya</i>					
8	My supervisor consults with employees regularly about workplace safety issues <i>Penyelia saya selalu berunding dengan pekerja mengenai masalah keselamatan di tempat kerja</i>					
9	Recognition is given to employees who work safely in my workgroup <i>Pengiktirafan diberikan kepada pekerja yang bekerja dengan selamat dalam kumpulan kerja saya</i>					
10	Unsafe conditions are promptly corrected in my work area <i>Keadaan yang tidak selamat segera diperbaiki di kawasan kerja saya</i>					