ISSN 1648-2603 (print)
ISSN 2029-2872 (online)

VIEŠOJI POLITIKA IR ADMINISTRAVIMAS
PUBLIC POLICY AND ADMINISTRATION
2022, T 21, Nr. 1/2022, Vol. 21, Nr. 1, p. 38-54

Strengthening Occupational Safety and Health Policy in Malaysia: Exploring the Awareness of Civil Servants

Nur Hairani Abd Rahman
Faculty of Business and Economics, University of Malaya
50603 Kuala Lumpur, Malaysia

Nurul Liyana Mohd Kamil
Faculty of Business and Economics, University of Malaya
50603 Kuala Lumpur, Malaysia

crossref http://dx.doi.org/10.5755/j01.ppaa.21.1.28201

Abstract. *Accident and fatality rates in the workplace are anticipated to rise constantly over the next few years. Extensive occupational safety and health studies have been conducted in various sectors, yet little attention has been paid to the public sector. This study aims to explore civil servants' awareness on occupational safety and health (OSH). A survey was conducted in a public university to examine the relationship between OSH awareness and the civil servants' safety understanding, self-preventive attitudes and self-care practices. The findings revealed that the majority of the respondents have a high understanding of OSH. A correlation analysis indicated that safety understanding, self-preventive attitudes and self-care practice have a positive association with OSH awareness. The highest correlation is between self-preventive attitudes and OSH awareness ($r = .732$, $p < .05$). The multiple correlation disclosed $F (3,128) = 92.93$, $p < .000$ with an $R2$ of .24. A significant linear relationship between safety understanding, self-preventive attitudes and self-care practices predicting the OSH awareness with the strongest correlation is between self-preventive attitudes ($\beta = .29$, $p < .05$). The findings suggest that public organisations focus on implementing the OSH guidelines and regulations to minimise occupational hazards at work.*

Keywords: *safety understanding; self-preventive attitudes; self-care practices; occupational safety and health (OSH) awareness; civil servants*
Raktažodžiai: *saugumo supratimas; savisaugos nuostatos; savisaugos praktika; informuotumas apie darbuotojų saugą ir sveikatą (DSS); valstybės tarnautojai*

Introduction

Occupational safety and health (OSH) is vital and should be part of the agenda for public sector development. Relevant OSH policies should be formulated and executed in the public sector to protect the well-being of the civil servants and reduce occupational risks and hazards (Ismail & Razimi, 2018). The practice must be monitored and evaluated regularly to ensure its compliance with the policy. Such a measure is in line with the Sustainable Development Goals (SDG), specifically Goal 3 (Good Health and Well-Being) and Goal 8 (Decent Work and Economic Growth) (United Nations, 2018), which aim at promoting safe and secure working environments for all employees regardless of their employment background. A good safety management system that is supported by an effective OSH policy implementation can facilitate improvement of the OSH at work. The International Labour Organisation (ILO) urges organisations to regulate OSH and abide by the regulation as a means to provide a safe and healthy workplace environment (Park et al., 2016). The ILO (2021) estimates that more than 2.78 million deaths and approximately 374 million nonfatal work-related injuries occur annually. These incidents significantly affect the workers whose health and safety are jeopardised while serving others.

In the Malaysian context, the Department of Occupational Safety and Health (DOHS) Malaysia reported that by 2020, the fatality rate is expected to be reduced to 4.36/100,000 workers

and the accidents rate will decline to 2.53/1,000 workers (DOHS, 2016). Data from DOHS Malaysia disclose a total of 3,345 occupational accidents in 2015. The number of cases increased to 3666 cases (9.6 percent) in 2016. A reversed trend took place in 2017 as the number of cases was reduced to 3635 cases (0.8 percent) before it spiked to 5031 cases in 2018 and 7984 cases in 2020. The numbes declined to 6933 in 2020 (DOHS, 2015–2020). As of May 2021, DOHS reported 3079 occupational accidents that had occurred in the workplace. In addition, the occupational fatality rates were above 4 from 2014 to 2018 and declined to below 4 in 2019 (see Table 1). It is important to note that these rates were beyond the average fatality rate at the global level. Malaysia is among the worst performers in Southeast Asia compared to other countries, such as Singapore (the best performer), which recorded a fatality rate of 1.1 in 2019; Myanmar, with a fatality rate of 3.2 in 2019; and the Philippines, with a rate of 3.8 in 2015 per 100,000 workers (ILO, 2020). Observing the current pandemic situation, it is anticipated that the surging trend will continue for the next few years.

Table 1. ***Occupational Accidents and Fatality Rate in Malaysia, 2014–2019***

OCCURRENCE/YEAR	2014	2015	2016	2017	2018	2019
Accident rate	3.10	2.81	2.88	2.93	2.40	2.71
Fatality rate	4.21	4.84	4.84	4.90	4.14	3.83

Source: Department of Occupational Safety and Health, Ministry of Human Resources (2019).
Notes:
(a) Occupational accident rate per 1,000 workers.
(b) Occupational fatality rate per 100,000 workers.

Occupational incidents and injuries affect employees who risk their health and safety. There are many drawbacks of work-related injuries, particularly with regard to absenteeism, low production output and the rise of cost management and financial pressure. With regard to the public sector, the presumption that the segment has low hazards and threats is inaccurate. The public sector covers a broad-spectrum of services; the civil servants (1) are hired in different types of occupation; (2) work in different kinds of workplace environments; (3) collaborate with various sectors; (4) meet different kinds of people, and (5) service the mass public. Hence, they are at a high risk of being involved in an unsafe and unhealthy working environment while fulfilling their duties and responsibilities. Potential hazards and threats might exist in the least unexpected environment if protection measures are taken lightly. Yet, there is limited evidence to comprehend this issue. Therefore, this paper intends to understand the OSH context by exploring and examining the awareness among civil servants, which will help to propose appropriate intervention to improve the OSH management system in the public sector.

Literature Review

OSH awareness plays an important role in preventing occupational injuries and disease occurrences among employees. Awareness programmes can be utilised to reinforce positive self-preventive attitudes and enhance self-care practice in the workplace. Despite rapid economic development, the general OHS awareness among employees in various industries is relatively low. According to Biggs et al. (2015), manufacturers tend to have a low level of understanding of how long-term safety practices should be implemented. Safety issues usually receive the least priority due to the cost control in many organisations. In Lugah et al.'s (2010) study among healthcare professionals, the researchers found that ergonomic awareness and knowledge were low. This issue is worrying as healthcare workers deal with various health threats at work. They are exposed to high-risk occupational injuries and diseases, which can lead to negative consequences. Another study on healthcare workers and their exposure to blood-borne pathogens (Hepatitis B virus) (Larese and Fiorito, 1994) found similar findings. Blood-borne pathogens are recognised as one of the major occupational hazards for healthcare workers due to a lack of awareness of Hepatitis B virus infection.

Similarly, Hu et al.'s (1998) highlighted that the major causes of the inability to prevent occupational injuries are the lack of knowledge and misperception of the importance of occupational safety and health at work. Studies that examined OSH awareness among employees from European countries also presented similar issues (Brolin et al., 2021; Dodoo & Al-Samarraie, 2021; Moller et al., 2021). Therefore, it is important to highlight that cooperation and understanding between workers and management are the key factors in promoting OSH awareness in the workplace (Latip, 2011). Full commitment and consistency on the part of employees and employers are vital to enhance the good culture of safety and health at work (Chong et al., 2018).

The measurement of OSH must consider the types of occupation and their working environment as one particular OSH policy may not fit all sectors. The issues on health and safety encountered by employees could be different according to the nature of their workplace. Various sectors (e.g., agricultural, forestry, mining and construction industries) present different degrees of safety practices. Constructions and manufacturing industries were found to dispense most occupational injuries and deaths compared to other sectors. According to Abdullah and Wern (2016), the construction industry is positioned as the sector with the highest fatality rate, although the sector is known to practise good safety culture compared to other sectors. Literature has been increasingly focusing on the primary types of accidents in the construction industry. The incidents were noted to have been caused possibly by falling objects, slipping or being buried under sand or soil. Workers are vulnerable to physical injuries and threats as a result of the use of tools and equipment, such as scaffolds, ladders and excavation equipment (Hamid et al., 2003). To maximise profits and produce high-quality products, workers are often forced to work in an unconducive working environment that threatens their physical safety and mental health (Kwon and Kim, 2015). Biggs et al. (2015) argued that due to financial factors, manufacturers are likely to possess low awareness in practicing long-term safety performance. However, empirical studies have proven that many employees have also been negligent in adhering to safety regulations while performing their duties (Wright, 1986; Terry et al., 2008; Bronkhorst, 2015).

Studies on OSH awareness in the public sector appear to focus on the health care segment (see Almost et al., 2018; Gul et al., 2017; Ricco et al., 2017; Lugah et al., 2010; Larese and Fiorito, 1994; Hu et al., 1998) rather than other segments, which means that there are gaps that require further investigation. The gaps include research on the education segment, particularly in public universities, with a focus on non-academicians, i.e., technical employees and administrative staff. This gap in research may be due to the assumption of a low-hazard and non-threatening working environment in the education segment. Yet, civil servants should be aware of any potential hazard and threat that can be caused by many reasons, such as workplace conditions, tools and equipment they use or how they perform their tasks. These factors could be unconsciously risky and dangerous to workers (Australian Commission for Occupational Safety and Health, 2007). Therefore, paying attention to the organisational capacity to recognise threats and hazards will enhance the protection efforts and reduce risks in the workplace (DS Risk Lexicon, 2008).

To ensure workers' well-being, health and safety in the workplace should be a priority to employers. Investing in workers' well-being by providing a safer and healthier workplace is vital. A safe working environment will increase productivity and profit for an organisation (Oxenburgh et al., 2004). Participation from top-level management is the key determinant to implement the health and safety policy in an organisation effectively (Chong et al., 2018; Mohammadi et al., 2018; Liu et al., 2015; Haadir & Panuwatwanich, 2011). The responsibility to maintain a safe workplace that is free from hazards depends not only on the employers' efforts, but also on the employees' obligations to comply with the safety procedures. Full commitment and participation from employees and employers will result in positive safety understanding, attitudes and practices (Bronkhorst, 2015).

Safety Understanding

In the context of this study, understanding what safety is refers to knowledge in the form of information and skills acquired through experience or education; such an understanding can nurture

a positive attitude and behaviour towards occupational health and safety and, as a result, potentially reduce hazards in the workplace (Shelby, 2014). Understanding safety plays a vital role in reducing and preventing work-related injuries and diseases. According to Sorensen et al. (2007), the poor practices of safety performance are the result of poor understanding and attitudes towards safety regulations. Therefore, enhancing safety awareness through various activities and programmes will encourage positive safety behaviour among employees. An understanding of safety is not required from employees alone, but also from those at the top managerial level. However, Lugah et al. (2010) claimed that the top management and professionals' understanding of safety is always low and this will keep the OSH management from receiving less attention and priority from the organisation.

In addition, Isa and Yusop (2017) found that occupational injuries are closely related to an unsatisfactory and inadequate understanding of the safety practice, thus allowing workplace accidents to happen. The extant review of the literature revealed an association between employees' safety understanding and OHS awareness. A high level of safety understanding among workers will eventually result in their positive behaviour regarding safety and health practice (Grill et al., 2015). Therefore, employees who are knowledgeable about OSH are expected to exercise greater compliance with safety rules (Kwon & Kim, 2013).

Past studies have manifested distinct exposure to hazards and threats experienced by people due to the distinct occupation and job description performed by them (Shelby, 2014; Wuletaw, 2008). Past studies have also identified that employees' perceptions of threats and risks were influenced by their educational level, job position and workplace environment (Anuar et al., 2009; Izegbu et al., 2006). Age differences and types of workplace environment, educational levels and job roles were also found to have a significant effect on occupational health and safety knowledge (Onibokun et al., 2012). Employers and employees with a higher educational level are assumed to have a low risk of occupational accidents (Anuar et al., 2009). In contrast, other studies (Vogel & Wanke, 2016; Narayanan, 2013) discovered that knowledge has a limited influence on attitude and behaviour. Based on these findings, it is evident that a high level of safety understanding of occupational health and safety can foster OSH awareness and promote positive self-preventive attitudes and self-care practice. Based on these arguments, this study posits the following hypothesis:

H1: Safety understanding has a significant link with OSH awareness in the workplace.

Self-preventive attitudes

A self-preventive attitude is regarded as an employee's attitude and perception of the safety exercise and performance in the workplace (Health and Safety Executive, 2014). Neal and Griffin (2016) defined a self-preventive attitude as a worker's perception of safe practices, regulations and processes at work. Salminen and Seppala (2015) denote s self-preventive attitude as an employee's perceptions of his/her management's approach towards risks and safety. For this reason, the present study considers attitudes as workers' views towards the safety practices, policies, procedures and safety conduct in their workplace. Safety attitudes are described as the behaviours that support safety performance and activities, such as safety training and safety adherence to minimise occupational accidents (Mahmood et al., 2017). In addition, Goswami et al. (2011) perceived self-preventive attitudes as an important element to reduce accident occurrences, which would lead to negative implications such as injuries. A review of the extant literature revealed that implementation of safety programmes is effective only when employees portray positive attitudes towards regulations (Fang et al., 2017; Schultz, 2016; Johnson, 2016; Tam et al., 2015).

Tomas et al. (2011) discovered that safety regulations and communication are among the components that strengthen the safety policy in a workplace. The study further revealed that an excellent workplace environment and full participation from employees will improve the safety practices in an organisation. Conversely, low participation from employees through poor self-preventive attitudes would allow accidents to happen in the workplace (Johari et al., 2017). To improve self-preventive attitudes, Newas et al. (2018) suggest that organisation management consider

three main elements: (1) worker identification towards safety practices by the management; (2) job promotion influenced by safety; and (3) worker's discernment of hazards in the workplace.

In addition, Shelby (2014) found that a high level of safety understanding among employees could influence them to execute a safe and positive practice in preventing workplace hazards. Having a high level of safety understanding will encourage them to take extra precautions by better understanding safety matters due to the fear of carelessness and endangerment of illnesses or diseases. Similarly, Karim and Chee (2016) found that occupational injuries were due to workers' negligence, attitude and level of education, and reluctance to adhere to safety laws and regulations in the workplace. In this regard, the key element that contributes to occupational injuries is a poor attitude (Goswami et al., 2011). Hence, the foregoing discussion prompts the following hypothesis:

H2: Self-preventive attitudes have a significant link with OSH awareness in the workplace.

Self-Care Practice

Self-care practice is closely related to the awareness of work-related safety and health hazards. It demonstrates the acquisition of knowledge and any changes in attitudes that will make an individual willing to follow preventive behaviours (Thomas et al., 2015). This indicates that a good knowledge of safety is associated with good self-preventive attitudes and self-care practice. The behavioural model by Frederick (1982, as cited in Zin and Ismail, 2015) proposes two elements that influence such practice: (1) individual perception based on instructions and (2) portrayal through practices. Thus, an observation of safety practices plays an important role in encouraging individuals to comply with regulations.

According to Shea et al. (2016), the poor practice of safety regulations is due to the poor self-preventive attitude among employees. Many workers in the manufacturing sector regularly neglect safety rules and regulations. Brown et al. (2017) claimed that when the management is reasonable with the workers, the workers tend to abide and adhere to the regulations and portray a good practice in performing their job. The safety training provided by an organisation also increases the safety practices among employees (Huang et al., 2012).

In the same vein, inappropriate safety discretion practised by healthcare workers in a hospital was also found to be high. Despite the standard regulations practised worldwide, there is an enormous gap between the level of knowledge and practice (Rampal et al., 2010; Izegbu et al., 2006). Narayanan (2013) revealed a small number of employees who constantly complied with the safety precautions highlighted in the standard operating procedures (SOPs). However, the common justification provided by those employees was the insufficient number of safety protection equipment provided by the management, time and inconvenience issues. The World Health Organization (2012) proposes that a high level of knowledge is associated with a positive self-preventive attitude and consequently portrays an excellent self-care practice in reducing workplace injuries. This proposal is empirically true, as evidenced in a past study (Papadopoli et al., 2020). Thus, the following hypothesis is proposed:

H3: Self-care practice has a significant link with OSH awareness in the workplace.

Health Belief Model (HBM)

The health belief model (HBM) can explain and predict individual health behaviours that could lead to health outcomes. The model can be used to understand the prevention and intervention of safety risks and hazards in the workplace (Carpenter, 2010). Rosenstock (1974) revealed that an individual will execute a preventative behaviour that s/he believes will reduce her/his risk under four circumstances:

(a) If the individual believes that s/he is vulnerable to a disease or problem (perceived susceptibility and severity)

(b) The after-effects of the disease or problem are serious (perceived benefits and barriers)

(c) The prescribed action to deal with the problem is helpful (self-efficacious)

(d) The action entails more advantages than costs.

Perceived susceptibility refers to an individual's belief that s/he might encounter a risk of getting a disease. Workers' increasing perceptions of susceptibility to job-related injury means that even though the job has benefits, the workers are vulnerable to occupational hazards and injuries. Even if an individual perceives personal susceptibility to a health threat, her/his beliefs regarding perceived benefits will be influenced by various actions to reduce the threat (Skinner et al., 2015). This statement is aligned with the HBM assumption, which suggests that to ensure individuals' behaviour change, one must ensure that they are motivated to act and feel threatened by current behavioural patterns. Such motivations will influence their belief that the change will benefit them (Ramos et al., 2021).

The HBM framework has been utilised to understand employees' behaviours, particularly their compliance with organisational safety and health standard precautions (Wright et al., 2019). The model is based on six constructs: (1) perceived susceptibility to a disease or illness (e.g., disease or health hazards related to any types of occupation); (2) perceived severity of a particular condition (e.g., worrying about being infected by occupational diseases); (3) perceived barriers (e.g., insufficient or incapacity of tools and equipment); (4) perceived benefits of the recommended behaviour (e.g., protection provided by employers); (5) cues to action (e.g., procedure and guideline); and (6) self-efficacy (Morowatisharifabad et al., 2012). Therefore, the HSB is suitable for understanding the OSH awareness among employees, particularly their comprehension of health and safety risks, hazards, benefits and actions concerning the workplace environment.

Health risks may be derived from the recognition that work-related injuries and illnesses are predictable and can be prevented. Furthermore, the employees' preventive behaviour might change as the obstacles reduce the chances of individuals to employ the action. Okun et al. (2016) indicated that some employees view work-related injuries as "part of the job" due to the inadequacy of individuals to manage and handle their workplace environment. However, they might face other nonsafety and health-related threats; for example, they might be fired for speaking up about problems in the workplace. Such implications may hinder their ability to engage in preventative behaviour. To counter these barriers, workers must be acknowledged in a broader context so that they can exercise their rights to practise safe and healthy work conditions.

The Theory of Planned Behaviour

Azjen (1991) describes the theory of planned behaviour (TPB) as an individual's desire to execute a behaviour if s/he intentionally wants to perform it. Guerin et al. (2018) postulates that an individual's desire and intention are shaped by her/his perception towards the action and beliefs about what others think s/he should do, motivation to comply with the wishes of others, and perceived behavioural control. Montano and Kasprzyk (2015) hypothesised that if a behaviour is beneficial to an individual and other people approve of the action, the individual will develop the intention to execute the behaviour. From this perspective, an attitude is beneficial to predict an individual's desire to execute a behaviour and to anticipate the recurrence of genuine action. However, the theory fails to incorporate environmental and contextual restraints; it does not constantly predict the execution of actual behaviour. Another contributing factor is whether an individual perceives a behaviour to not influence or affect her/hi, as the human nature of behaviour is not consistently logical. These aspects hinder the principle of this theory which vestiges on a logical sequence.

An individual's opinion might be influenced by her/his beliefs and behaviour. In the workplace context, such a perception involves the management and workers who are affiliated with the individual. For example, a worker may contemplate safety as irrelevant if s/he does not trust that her/his management and co-workers are keen on the safety aspect. One significant development of the TPB is the construction of a safe climate area of study, which facilitates an understanding of occupational safety (Fogarty & Shaw, 2010). The most vital predictor of safety climate and safety practices is the workers' discernment towards the management's attitudes towards safety. The TPB proposes that the management is responsible to ensure that an organisation's safety practices adhere

to the standard procedure. If the employee perceives the behaviour as not advantageous, the management might influence the employee to practise safe behaviours and comply with the regulations.

The environment where public servants work, the equipment they use and how they perform their tasks (e.g., extended time of keyboard use, poor workplace design and manual handling) could be risky and dangerous. Apart from that, health hazards and threats may involve violence, bullying and stress in the workplace. Gong (2019) noted that safety behaviour, attitudes and awareness are linked to accidents in the university environment. Therefore, it is vital to promote and enhance a safe culture at a university (Perrin et al., 2018).

Strengthening occupational health and safety can prevent accidents and injuries in higher education institutions. Past studies have shown various findings with regard to OSH in various types of organisations, including the public sector (with the exception of the public health sector). Because studies on the OSH in Malaysia are limited, this papers aims at filling this gap by exploring the subject against a public university setting. The highlight of this study is on OSH awareness, which will be explored through safety understanding, self-preventive attitudes and self-care practice.

Material and Methods

The study employed a quantitative approach to collect data. A simple random sampling was adopted to select the target respondents who work at a public university in the Klang Valley area, Malaysia. The survey was conducted between January and April 2019. The researcher recruited 164 assistant engineers who are involved in a high-risk working environment and who are highly exposed to occupational accidents and injuries. The study was conducted in a public university. The questionnaire survey was distributed online through formal email resulting in an 89 percent response rate (equivalent to 146 completed questionnaires). To receive a high response rate, follow-up calls were made to the respondents. Reminder notices were sent to the respondents through email to encourage participation. The data collected were coded, entered and analysed using Statistical Package for Social Science (SPSS) version 24. Correlation analysis and regression tests were conducted to examine the links among safety understanding, self-preventive attitudes and self-care practice with OHS awareness.

Survey Instrument Development

The questionnaire consists of five main parts, namely: (1) the respondent's background; (2) understanding of safety ; (3) self-preventive attitudes; (4) self-care practices; and (5) OSH awareness. The items used in this study are adapted from previous studies. Additionally, the questionnaire was sent to three subject matter experts to validate the instrument. The revised version of the questionnaire was used for the actual data collection.

Safety understanding

Section A of the questionnaire queries the respondents' understanding of safety. The OSH knowledge question requires a "Yes" or "No" response. The questions seeks to test the respondents' knowledge of OHS.

Table 2. ***Safety Understanding Statements***

Do you know about occupational hazards?
Have you heard about electrical shock before?
Do you think you possess some knowledge on electrical safety?
Do you know the type of personal protective equipmet (PPE) you should use?
Do you know the importance of using PPE?
Do you know about any protocols that are in place to deal with occupational hazards in this workplace?

In this workplace, is there a designated unit that manages staff occupational hazard and exposure?

Source: Authors.

Self-preventive attitudes

Section B of the questionnaire consists of self-preventive attitudes questions. In this section, respondents' attitudes were tested, using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. Twelve items were designated in this section.

Table 3. ***Self-preventive Attitudes Statements***

All exposures to occupational hazards should be reported to and appropriately documented by appropriate authorities.
Occupational hazard is an issue that should be taken seriously and given prompt attention.
Prevention of occupational hazards is a joint responsibility of the management and the staff.
Paying extra attention to occupational hazards is an unnecessary burden on me.
Routine health evaluation is advisable.
Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazards.
It is important to wear PPE when performing a task.
Employees who do not use safety equipment should be punished.
Employees must decide themselves whether to use or not to use safety equipment.
The use of safety equipment is absolutely necessary in my workplace.
PPE bothers me when I am working.
PPE is a waste of money.

Source: Authors.

Self-care practice

This section consists of five questions to assess respondents' practices and compliance with the safety regulations in the workplace. This section states the extent to which the respondents comply with the OHS regulations.

Table 4. ***Self-care Practice Statements***

I wear safety equipment when performing my job to avoid any injury.
I started using personal protective equipment since I joined this work.
I get a replacement of worn-out personal protective equipment.
I feel uncomfortable while using personal protective equipment (PPE).
I report the difficulty of PPE usage to my superior.

Source: Authors.

Occupational Safety and Health Awareness

Six items were used to measure the respondents' OSH awareness. A five-point Likert scale ranging from 'strongly disagree' to 'strongly agree' was assigned to each item.

Table 5. ***Self-care Practice Statements***

I am clear about my rights and responsibilities in relation to workplace health and safety.
I am clear about my employers' rights and responsibilities in relation to workplace health and safety.
I know how to perform my job in a safe manner.

If I became aware of a health or safety hazard at my workplace, I would know whom (at my workplace) I can report to.
I have the knowledge to assist in responding to any health and safety concerns at my workplace.
I know the necessary precautions that I should take while doing my job.

Source: Authors.

Demographic Information

According to Aluko et al (2016), demographic factors could influence individual OSH awareness. Therefore, a few questions related to the respondents' demographic information were also added to the questionnaire. The demographic variables are gender, age, ethnicity, level of education, position, grade, department, length of employment and working hours per week.

Summary of the Measurement Instrument

Briefly, the measurement instrument of the study comprises six sections, as explained above. Table 6 displays the summary of the measurements for the study.

Table 6. ***Summary of Measurements for the Study***

VARIABLE	ITEM	RELIABILITY	SOURCE(S) OF SCALE
Safety understanding	7	0.85	Ndejjo et al. (2015)
Self-preventive attitudes	12	0.85	Aluko et al. (2016)
Protective practices	5	0.83	Aluko et al. (2016)
OHS mindfulness	6	0.87	Institute for Work and Health (2016)
Recommendations	2	-	-
Demographic information	9	-	Aluko et al. (2016)
Total Items	59		

Source: Authors.

Results

Most of the respondents (78%) were within the age of 30 to 39 and some (14%) were between 24 to 29 years of age. About 22% of the respondents were between 40 and 49 years old. 18% of the respondents were between 50 to 59 years old. The majority of the respondents are diploma holders (68.9%) and 18.9% are certificate holders. About 3.8% of the respondents are secondary school leavers; 7.6% have a bachelor's degree and only 0.8% have a master's degree. In terms of their employment length, 45.5% of the respondents have worked for 10 to 19 years at the university. Another 38.9% have worked less than 10 years; 6.8% have served for 20 to 29 years and 9.1% have worked for more than 30 years at the university. Generally, the employees work for five to six days per week. The mean score and standard deviation (SD) for the 132 respondents are 2.33 and 0.84 respectively, thus indicating that their average age is between the second and third group of the age range, i.e., 30–39 years old and 40-49 years old. On the other hand, the mean value for the respondents' level of education is 3.79 with an SD of 0.77. Their average working experience in the amount of years is 1.86 (SD= 0.90).

In terms of safety understanding among the respondents on occupational hazards and safety, about 98.5% of the respondents have a high level of safety understanding, while only 2% of the respondents have a low level of understanding of occupational hazards and safety (see Table 7). Besides, 85.6% of the respondents know the type of PPE, while 83.3 % are aware of the importance of the protective equipment. With regard to their understanding of the existence of a designated safety unit in the workplace, about 77.3% of the respondents knew about it while the remaining 22.7% did not possess this knowledge.

Table 7. ***Safety Understanding towards Occupational Hazards and Safety***

ITEM	HIGH KNOWLEDGE, %	LOW KNOWLEDGE, %
Knowledgeable about occupational safety and health	98.5	1.5
Knowledgeable about physical hazards	81.1	18.9
Knowledgeable about chemical hazards	75.0	25.0
Knowledgeable about n biological hazards	47.7	42.3
Knowledgeable about ergonomic	45.5	54.5
Knowledgeable about electrical hazards	92.4	7.6
Knowledgeable about mechanical hazards	85.6	14.4
Knowledgeable about electrical safety	87.9	12.1
Knowledgeable about type of PPE	85.6	14.4
Knowledgeable about importance of PPE	83.3	16.7
Know designated unit in workplace	77.3	22.7

Source: Authors.

Next, the summary of a self-preventive attitude towards occupational health and safety hazards is discussed. Most of the respondents believe in the necessity to wear personal protective equipment when performing a task and whenever necessary (see Table 8). Most of them (92.4%) perceived the training and provision of safety equipment by the management as vital in order to reduce the risk of exposure to occupational hazards, while 72.1% agreed that employees who did not comply with the regulations to wear safety equipment should be penalised. While 42.4% of the respondents are comfortable with safety equipment, another 22% perceived it to be burdensome.

Table 8. ***Substantive Issues to the Study***

ITEM	AGREE, %	NEUTRAL, %	DISAGREE, %
All exposures to occupational hazards should be reported to and appropriately documented by appropriate.	90.1	4.5	5.3
Occupational hazard is an issue that should be taken seriously and given prompt attention.	93.2	2.3	4.6
Prevention of occupational hazards is a joint responsibility of the management and the staff.	91.7	3.0	5.3
Paying extra attention to occupational hazard is an unnecessary burden on me.	30.3	21.3	48.5
Routine health evaluation is advisable.	85.6	9.1	5.3
Training of staff and provision of personal protective equipment is necessary to reduce the risk of exposure to occupational hazard.	92.4	2.3	5.3
It is important to wear personal protective equipment (PPE) when performing task.	90.1	4.5	5.3
Employees who do not use safety equipment should be punished.	72.1	22.7	4.6
Employees must decide themselves to use or not to use safety equipment.	46.2	18.9	34.9
The use of safety equipment is absolutely necessary in my workplace.	90.0	4.5	4.6
Personal protective equipment (PPE) bothers me when I am working.	22.0	35.6	42.4
Personal protective equipment (PPE) is a waste of money.	14.4	15.2	70.5

Source: Authors.

In terms of self-care practice, 55.3% of the respondents always wear safety equipment when performing a job. With regard to compliance, only 29.5% always comply with the regulations, and

44.7% often comply with the safety rules. Their reasons were unavailability of safety kits (61.4%), associated discomfort (29.5%) and time compliance (5.3%). Nevertheless, 25.0% of the respondents stated that they never receive a replacement of a worn-out PPE; 18.9% rarely received a replacement; 28.8% received replacement only sometimes; 24.2% often received the replacement and only 3.0% always received a new PPE when it was worn out.

Pearson correlation coefficient was performed to evaluate the strength of linear correlation between each variable. The inter-correlations among OSH awareness, safety understanding, self-preventive attitudes and self-care practices were examined (Table 9). The correlation coefficient score between OSH awareness and safety understanding is .52, which is significant at $p < .05$, and the effect size is medium. Significant correlation was noted between OSH awareness and self-preventive attitudes ($r = .732$, $p < .05$) with a large effect size. The correlation coefficient between OHS mindfulness and self-care practices score is also significant ($r = .691$, $p < .05$) with a large effect size.

Table 9. ***Correlation between Safety Understanding, Self-preventive Attitudes and Self-care Practices with OSH awareness***

	OSH AWARENESS	SAFETY UNDERSTANDING	SELF-PREVENTIVE ATTITUDES	SELF-CARE PRACTICES
OHS mindfulness	1.00			
Safety understanding	.52**	1.00		
Self-preventive attitudes	.73**	.17	1.00	
Protective practices	.69**	.15	.18*	1.00

Source: Authors.

Multiple linear regression analysis was employed to ascertain the extent to which the three predictors explain the OSH awareness among civil servants. The significant regression equation disclosed a good fit ($F(3,128) = 92.93$, $p < .000$). The equation of regression for predicting OSH awareness is as follows: OSH awareness = .095 + 0.65 *Safety Understanding + 0.73 *Self-care Practice + 0.50 *Self-preventive Attitudes. As indicated by the regression analysis results (Table 11), all the variables are confirmed to have an impact on OSH awareness, with the strongest correlation noted between self-preventive attitudes and OSH awareness ($\beta = .29$, $p < .05$). The adjusted R2 indicates that 23% of the OSH awareness variance can be predicted from the predictor variables (see Table 10).

Table 10. ***Model Summary***

MODEL	R	R^2	ADJUSTED R^2	STD. ERROR OF THE ESTIMATE
1	.494[a]	.243	.233	.48257

a. Predictors: (Constant), Safety Understanding, Self-Preventive Attitudes, Self-care Practices.

Source: Authors.

Table 11. ***Multiple Linear Regression analysis of civil servants safety understanding, self-preventive attitudes and self-care practices with OSH awareness***

HYPOTHESIS	RELATIONSHIP	BETA (*B*)	STD. ERROR	*T*-VALUES	*P*-VALUES	DECISION
H1	SU → OA	.232	.412	6.09	<.05	Supported
H2	SA → OA	.294	.733	7.57	<.05	Supported
H3	SP → OA	.075	.454	2.33	<.05	Supported

Source: Authors.
Note: OA – OSH awareness; SU – safety understanding; SA – self-preventive attitudes; SP – self-care practices

Discussion

Assessment of the OSH awareness among the respondents

As the findings indicate, the majority of the respondents possess a high understanding of safety and work-related health hazards in the workplace. This finding is in line with previous studies, which also revealed a high level of understanding among employees (Aluko et al., 2016; Ndejjo et al., 2015). The respondents in this study also acknowledged the type of Personal Protective Equipment and realised the importance of following the rules and regulations enlisted in the safety rules, as proposed by Masi and Cagno (2015). The designated unit responsible for any OSH issues in the institution is available and the respondents are aware that the regulated unit is accountable for any issues pertaining to occupational safety and health. Having a special unit to deal with and monitor OSH matters in organisations might be helpful to ensure that OSH risks and threats can be minimised. Accordingly, future research may explore such units to understand the groundwork that they have implemented to ensure the efficiency of the OSH management system. It is also important to comprehend the challenges and barriers in OSH management for improvement and development.

With regard to self-preventive attitudes of the personnel, the findings indicate that most of the respondents have a positive attitude towards occupational safety and health. This finding corresponds to Mahmood et al.'s (2017) findings and can be explained by the respondents' high level of understanding and their fear of occupational injuries and illnesses, which could be terminal and life-threatening in some instances, as claimed by Salminen and Seppala (2015). Most of the respondents believe that it is vital to wear personal protective equipment when performing a task. Most of them also perceive that the training and provision of safety equipment by the management is vital in reducing exposure risk of exposure to occupational hazards. Although most of the respondents possess a positive attitude towards occupational safety and health, some perceived it as burdensome. The result is in line with the research findings of Narayanan (2013) and Singer et al. (2009), who found that the ignorance of workers to postulate safety behaviour was due to perceiving compliance as burdensome.

The finding also indicates that the respondents' practice and compliance to the safe work environment is at the average level. This is somewhat surprising as most of the respondents possess a high level of knowledge and a positive attitude towards occupational safety and health. The respondents are also unable to execute proper safety practices because personal protective equipment (PPE) is not made available by the management. This might be the reason why the employers' practices of occupational safety in the workplace are at the average level and proves that participation of employers, particularly in providing adequate equipment to workers, would result in positive safety practices, consistent with the findings of Bronkhorst (2015) and Chong et al. (2018).

Correlation between OSH Awareness with Safety Understanding, Self-Preventive Attitudes and Self-care Practices

The Pearson correlation coefficient score between OSH awareness and safety understanding is .52, which is significant at $p < .05$, and the effect size is medium. This indicates that the employees who possess knowledge of occupational safety and health are aware of any injuries or hazards they might be exposed to. This finding is consistent with Aluko et al. (2016), who found that employees with a high level of knowledge are more aware of occupational health and safety. With regard to attitude, the relationship found was significant with a large effect size of correlation ($r = .732$, $p < .05$), similar to Walters et al. (2017), who proved a strong association between attitude and OSH awareness.

The findings above provide interesting and encouraging evidence. It is empirically certain that any individual who possesses a positive attitude or belief and has a high OSH awareness of occupational hazards can prevent the risk of injury. This result is in line with Health Belief Model (HBM), which indicates that individuals might take protective actions from a realisation that occupational hazards and injuries can be prevented and exhibit a positive attitude. In the context of

self-care practices, the Pearson Correlation Coefficient test proved that the association between self-care practices and OSH awareness is significant with a large effect size of correlation ($r = .691$, $p < .05$). The correlation result provides interesting and encouraging evidence because it is empirically attested that any individual with high OSH awareness of occupational hazards will execute a safe behaviour in the workplace to mitigate exposure to any occupational injury or hazard.

This finding aligns with the theory of planned behaviour, which proposes that an individual's actual behaviours are derived from her/his intention and perception that the behaviours are advantageous to her/ him. Such a notion is similar to other studies (Walters et al., 2017; Aluko et al., 2016; Ndejjo, 2015) which also found an association between self-care practices and OSH awareness. As the respondents are aware of the occupational safety and hazards, they will perform positive self-care practices that enable them to prevent injuries, which can be seen as advantageous for their safety and health. Finally, the multiple linear regression indicated that all three variables are significant, with OSH awareness and self-preventive attitudes having the strongest correlation of $r = .73$ ($\beta = .29$, $p < .05$).

Conclusions and recommendations

The purpose of the study is to investigate occupational safety and health (OSH) awareness among civil servants who are working in higher education institutions. The investigation looked into three main aspects: safety understanding, self-preventive attitudes and self-care practices. This study provides some insights into the assessment of OSH policy implementation in the organisation, particularly by examining civil servants' awareness and opinions on the measures taken by the organisations to provide a conducive working environment. The OSH management system in the organisation has helped to ensure that the employees oblige with the OSH guidelines and procedure, not only to minimise occupational risks and threats, but also as part of the protection strategy to take care of the employees' well-being. This study has confirmed the empirical relationship between OSH awareness on safety understanding, self-preventive attitudes and self-care practices.

Based on the findings, the current study proposes several suggestions for the organisation to consider. First, the Occupational Safety and Health Unit should strengthen the execution of safety regulations. The unit should also conduct periodical OSH monitoring and inspection to ensure that the standard procedure is adhered to by the employees. Apart from that, trainings and awareness campaigns should be held to increase OSH awareness among the employees and encourage them to participate in safe work practices. The workers should also be educated with relevant OSH information, such as knowledge of the possibility of workplace accidents and ways to avoid occupational risks and hazards. Most of the employees will certainly gain knowledge of risks and hazards at work through their experience. However, the absence of a safety training is seen as the root cause of the occupational accidents as the employees have little knowledge and skills to recognise potential hazards in the workplace.

Also, it is imperative to allocate an adequate budget to provide a good quality of safety tools and equipment. Training on using the tools and equipment must be conducted to make sure the employees have the knowledge to operate it. Sufficient protective equipment should be provided, and worn-out protective equipment should be replaced with new ones. Although this seems to indicate high costs of implementing the OSH policy, protecting the well-being of the employees should be a priority to any organisation.

The findings of the study have presented significant theoretical implications. First, this study confirmed the assumptions forwarded by both theories, i.e. (i) individual behaviour is influenced by the feeling of being threatened by unsafe working conditions, and (ii) individuals will react to matters that are advantageous to them. The findings also add value to the theories through empirical evidence from a public sector perspective, specifically from the perspective of civil servants who are serving at a public university. As noted, limited studies have been conducted to assess OSH awareness in the public sector or university, except for the public health sector. Adding this aspect contributes to expanding the background complexity of the theories.

This study presents two limitations. First, it examined the subject from a cross-sectional approach, which is considered sufficient to explore an OSH awareness context. However, to further comprehend the extent to which safety knowledge, self-preventive attitudes and self-care practices could affect OSH awareness, future studies may adopt a different approach, such as a longitudinal study design (e.g., longitudinal survey or panel study) or a qualitative study to better understand OSH awareness. Second, the study only surveyed one group of the population. Therefore, future studies are encouraged to expand the population by surveying other groups of population in the public sector. Although the study has some limitations, it has indeed provided insightful empirical evidence to understand OSH awareness and contributed relevant suggestions that can benefit organisations to strengthen and improve their existing OSH policy.

Acknowledgements

This study was funded by the University of Malaya (UM), Malaysia, under Grant entitled Strengthening Occupational Health and Safety Management System [Project number: GPF011P-2018].

References

1. Abdullah, D. N. M. A., & Wern, G. C. M. (2011). An analysis of accidents statistics in Malaysian construction sector. *International Conference on E-business, Management and Economics*, 3(1), 1-4.
2. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
3. Almost, J. M., VanDenKerkhof, E. G., Strahlendorf, P., Tett, L.C., Noonan, J., Hayes, T., Van Hulle, H., Adam, R., Holden, J., Kent-Hillis, T., McDonald, M., Pare, G.C., Lanhhar, K. & Silva V. S. (2018). A study of leading indicators for occupational health and safety management systems in healthcare. *BMC Health Service Research*, 18(296). https://doi.org/10.1186/s12913-018-3103-0.
4. Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T., & Popoola, B. F. (2016). Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers. *BMC Research Notes*, 9(1), 71-89. https://doi.org/10.1186/s13104-016-1880-2
5. Australian Commission for Occupational Safety and Health. (2008). *Commission for Occupational Safety and Health Annual Report 2007/0*. Retrieved from https://www.commerce.wa.gov.au/sites/default/files/atoms/files/cOHS_annual_report_2007-08.pdf. (21 February 2019).
6. Biggs, H. C., Dingsdag, D. P., Sheahan, V. L., & Cipolla, D. J. (2015). *A Construction Safety Competency Framework: Improving OH&S performance by creating and maintaining a safety culture*. Retrieved from http://www.construction-innovation.info/images/pdfs/Publications/Industry_publications/Safety_Leadership_Guide/CSCF_Book.pdf (21 February 2019).
7. Brolin, K., Lanner, D. & Halldin, P. (2021). Work-related traumatic brain injury in the construction industry in Sweden and Germany. *Safety Science*, 136 (1), 1-11. https://doi.org/10.1016/j.ssci.2020.105147
8. Bronkhorst, B. (2015). Behaving safely under pressure: The effects of job demands, resources, and safety climate on employee physical and psychosocial safety behavior. *Journal of Safety Research*, 55(1), 63-72. https://doi.org/10.1016/j.jsr.2015.09.002
9. Bronkhorst, B. (2015). Behaving safely under pressure: The effects of job demands, resources, and safety climate on employee physical and psychosocial safety behaviour. *Journal of Safety Research*, 55(1), 63-72. https://doi.org/10.1016/j.jsr.2015.09.002
10. Carpenter, C. J. (2010). A meta-analysis of the effectiveness of Health Belief Model variables in predicting behavior. *Health Communication*, 25(8), 661–669.
11. Chong, H. C., Ramayah, T., & Subramaniam, C. (2018). The relationship between critical success factors, internal control and safety performance in the Malaysian manufacturing sector. *Safety Science*, 104(1), 179-188. https://doi.org/10.1016/j.ssci.2018.01.002.
12. Department of Occupational Safety and Health. (2018). *Occupational diseases and poisoning investigation*. Retrieved from http://www.dOHS.gov.my/index.php/en/occupational-diseases-and-poisoning-statistic. (24 November 2018).
13. Department of Occupational Safety and Health. (2020). *National occupational accident &fatality rate*. Retrieved from https://www.dosh.gov.my/index.php/statistic-v/national-occupational-accident-fatality-rate-v. (18 July 2021).
14. DHS Risk Lexicon, US Department of Homeland Security. (2008). *Risk Steering Committee: DHS Risk Lexicon, September 2008*. Retrieved from www.dhs.gov/xlibrary/assets/dhs_risk_lexicon.pdf (26 April 2020).

15. Dodoo, J.E., Al-Samarraie, H. (2021). A systematic review of factors leading to occupational injuries and fatalities. *J Public Health (Berl.).* https://doi.org/10.1007/s10389-020-01427-4
16. Fogarty, G. J., & Shaw, A. (2010). Safety climate and the theory of planned behavior: Towards the prediction of unsafe behavior. *Accident Analysis & Prevention*, 42(5), 1455-1459. https://doi.org/10.1016/j.aap.2009.08.008
17. Gong, Y. (2019). Safety culture among Chinese undergraduates: a survey at a university. *Safety Science*, 111(1), 17-21. https://doi.org/10.1016/j.ssci.2018.09.010
18. Grill, M, Grytnes, R. & Torner, M. (2015). Approaching safety in the Swedish and Danish construction industry: professionals' perceptions of safety culture differences. *Safety Science Monitor*, 6(19), 1-17.
19. Guerin, R. J., Toland, M. D., Okun, A. H., Rojas-Guyler, L. & Bernards, A. L. (2018). Using a Modified Theory of Planned Behavior to Examine Adolescents' Workplace Safety and Health Knowledge, Perceptions, and Behavioral Intention: A Structural Equation Modeling Approach. *Journal of Youth and Adolescence*, 47(8), 1595-1610. https://doi.org/10.1007/s10964-018-0847-0
20. Gul, M. M. Fatih A. K. & Guneri, A. F. (2017). Occupational health and safety risk assessment in hospitals: A case study using two-stage fuzzy multi-criteria approach. *Human and Ecological Risk Assessment: An International Journal*, 23(2), 187-202. https://doi.org/10.1080/10807039.2016.123436
21. Hamid, A. R. A., Yusof, W. Z. W., & Singh, B. S. B. J. (2003). *Hazards at construction sites*. Skudai: Universiti Teknologi Malaysia.
22. Hu, S. C., Lee, C. C. Shiao, J. S. C., & Guo, Y. L. (1998). Employers' awareness and compliance with occupational health and safety regulations in Taiwan. *Occupational Medicine*, 48(1), 17-22. https://doi.org/10.1093/occmed/48.1.17
23. International Labour Organization. (2021). *Safety and health at work*. Retrieved from https://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm July 2021).
24. Ismail, A. B., & Razimi, M. S. B. A. (2018). Occupational Safety and Health (OHS) From Islamic Perspective: A Conceptual Study. *Ikonomika*, 3(1), 73-88.
25. Kwon, J. & Kim, W. (2015). Effects of attitudes vs experience of workplace fun on employee behaviors: Focused on Generation Y in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 25(3), 410-62.
26. Larese, F., & Fiorito, A. (1994). Musculoskeletal disorders in hospital nurses: a comparison between two hospitals. *Ergonomics*, 37(7), 1205-1211. https://doi.org/10.1080/00140139408964898
27. Latip, A. D. S. K. (2011). *Knowledge on Occupational Health and Safety among Healthcare Workers in Penampang, Putatan and Inanam Health Clinics Sabah* (Doctoral dissertation, Universiti Malaysia Sarawak).
28. Lugah, V, Ganesh, B., Darus, A., Retneswari, M., Rosnawati, M.R. & Sujatha, D. (2010). Training of occupation safety and health: knowledge among healthcare professionals in Malaysia. *Singapore Medical Journal*, 51(7), 586-592.
29. Masi, D., & Cagno, E. (2015). Barriers to OHS interventions in Small and Medium-sized Enterprises. *Safety Science*, 71(1), 226-241. https://doi.org/10.1016/j.ssci.2014.05.020
30. Moller, J.L., Kines, P., Dyreborg, J., Andersen, L.L. & Ajslev, J.Z.N. (2021). The competences of successful safety and health coordinators in construction projects. *Construction Management and Economics*, 39(3), 199-211. https://doi.org/10.1080/01446193.2020.1818800
31. Montano, D. E., & Kasprzyk, D. (2015). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. *Health Behavior: Theory, Research and Practice*, 52(10), 95-124.
32. Morowatisharifabad M.A., Momayyezi M., Ghaneian M.T. (2012). Health belief model and reasoned action theory in predicting water saving behaviors in Yazd, Iran. *Health Promot. Perspect*. 2, 136–144. doi: 10.5681/hpp.2012.016.
33. Narayanan, S. (2013). *Knowledge, attitude and practice on occupational safety and health among medical laboratory personnel in Hospital Raja Permaisuri Bainun Ipoh-Impact of intervention* (Doctoral dissertation, UTAR).
34. Ndejjo, R., Musinguzi, G., Yu, X., Buregyeya, E., Musoke, D., Wang, J. S., & Ssempebwa, J., (2015). Occupational health hazards among healthcare workers in Kampala, Uganda. *Journal of Environmental and Public Health*, 3(1), 11-22. https://doi.org/10.1155/2015/913741
35. Okun, A. H., Guerin, R. J., & Schulte, P. A. (2016). Foundational workplace safety and health competencies for the emerging workforce. *Journal of Safety Research*, 59(1), 43-51. https://doi.org/10.1016/j.jsr.2016.09.004
36. Oxenburgh, M., Marlow, P.S.P., & Oxenburgh, A. (2004). *Increasing Productivity and Profit through Health and Safety: The Financial Returns from a Safe Working Environment (1st ed.)*. CRC Press. https://doi.org/10.1201/9780203427927
37. Papadopoli, R., Nobile, C.G.A., Trovato, A. et al. (2020). Chemical risk and safety awareness, perception, and practices among research laboratories workers in Italy. *J Occup Med Toxicol*, 15(17). https://doi.org/10.1186/s12995-020-00268-x
38. Park, J. W., Park, J. S., Kim, S., Park, M., Choi, H., & Lim, S. (2016). The association between long working hours and hearing impairment in noise unexposed workers: data from the 5th Korea National Health and Nutrition Examination Survey (KNHANES 2010–2012). *Annals of Occupational and Environmental Medicine*, 28(1), 55-60.

39. Perrin, L., Gabas, N., Corriou, J. P., & Laurent, A. (2018). Promoting safety teaching: An essential requirement for the chemical engineering education in the French universities. *Journal of Loss Prevention in the Process Industries*, 54(1), 190-195. https://doi.org/10.1016/j.jlp.2018.03.017
40. Ramos AK, Carvajal-Suarez M, Trinidad N, et al. Health and Well-Being of Hispanic/Latino Meatpacking Workers in Nebraska: An Application of the Health Belief Model. *Workplace Health & Safety*. June 2021. doi:10.1177/21650799211016907
41. Riccò, M., Cattani, S., Casagranda, F., Gualerzi, G. & Signorelli, C. (2017). Knowledge, attitudes, beliefs and practices of occupational physicians towards vaccinations of health care workers: A cross sectional pilot study in North-Eastern Italy. *International Journal of Occupational Medicine and Environmental Health*, 30(5), 775-790. https://doi.org/10.13075/ijomeh.1896.00895
42. Rosenstock, I. M. (1974). The health belief model and preventive health behavior. *Health Education Monographs*, 2(4), 354-386. https://doi.org/10.1177/109019817400200405
43. Salminen, S., & Seppala, A. (2015). Safety climate in Finnish-and Swedish-speaking companies. *International Journal of Occupational Safety and Ergonomics*, 11(4), 389-397. https://doi.org/10.1080/10803548.2005.11076657
44. Singer, S., Lin, S., Falwell, A., Gaba, D., & Baker, L. (2009). Relationship of safety climate and safety performance in hospitals. *Health Services Research*, 44(2p1), 399-421. https://doi.org/10.1111/j.1475-6773.2008.00918.x
45. Skinner, C. S., Tiro, J., & Champion, V. L. (2015). Background on the health belief model. *Health behavior: Theory, Research, and Practice*, 75(1), 23-55.
46. Terry T.N., Burneo P.S., Martinez C.M., Riofrio J., Smith-Jackson T. (2008). Construction Safety and Informal Training: A Two Part Study. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 52(21):1723-1727. doi:10.1177/154193120805202107
47. United Nation. (2018). *Sustainable Development Goals*. Retrieved from https://www.un.org/sustainabledevelopment/sustainable-development-goals/ (12 March 2019).
48. Walters, A. U., Lawrence, W., & Jalsa, N. K. (2017). Chemical laboratory safety awareness, attitudes and practices of tertiary students. *Safety Science*, 96(1), 161-171. https://doi.org/10.1016/j.ssci.2017.03.017
49. Wright, C. (1986). Routine deaths: fatal accidents in the oil industry. *Sociological Review*, 34, 265–289. https://doi.org/10.1111/j.1467-954X.1986.tb02702.x
50. Wright, T., Adhikari, A., Yin, J., Vogel, R., Smallwood, S., & Shah, G. (2019). Issue of Compliance with Use of Personal Protective Equipment among Wastewater Workers across the Southeast Region of the United States. *International Journal of Environmental Research and Public Health*, 16(11), 1-18. https://doi.org/10.3390/ijerph16112009.

Nur Hairani Abd Rahman, & Nurul Liyana Mohd Kamil

Darbuotojų saugos ir sveikatos politikos stiprinimas Malaizijoje: Valstybės tarnautojų informuotumo tyrimas

Anotacija

Numatoma, kad per ateinančius kelerius metus nelaimingų atsitikimų ir mirtinų nelaimingų atsitikimų darbe skaičius nuolat didės. Įvairiuose sektoriuose buvo atlikta daug darbuotojų saugos ir sveikatos tyrimų, tačiau viešajam sektoriui skirta nedaug dėmesio. Šio tyrimo tikslas – ištirti valstybės tarnautojų informuotumą apie darbuotojų saugą ir sveikatą (DSS). Viešajame universitete buvo atlikta apklausa, kurios tikslas – ištirti ryšį tarp DSS informuotumo ir valstybės tarnautojų saugos supratimo, savisaugos nuostatų ir savisaugos praktikos. Rezultatai atskleidė, kad dauguma respondentų turi gerą supratimą apie DSS. Koreliacinė analizė parodė, kad saugos supratimas, savisaugos nuostatos ir savipriežiūros praktika turi teigiamą ryšį su DSS informuotumu. Didžiausia koreliacija yra tarp savisaugos nuostatų ir DSS supratimo ($r = .732$, $p < .05$). Atskleista daugialypė koreliacija $F (3,128) = 92,93$, $p < .000$, R2 lygus .24. Reikšmingas tiesinis ryšys tarp saugos supratimo, savisaugos nuostatų ir savipagalbos praktikos, prognozuojantis DSS sąmoningumą; stipriausias ryšys yra tarp savisaugos nuostatų ($\beta = .29$, $p < .05$). Išvados rodo, kad valstybinės organizacijos daugiausia dėmesio skiria DSS gairių ir taisyklių įgyvendinimui, kad sumažintų profesinę riziką darbe.

Nur Hairani Abd Rahman, Senior Lecturer, Faculty of Business and Economics, University of Malaya
E-mail: nurhairani@um.edu.my

Nurul Liyana Mohd Kamil, Senior Lecturer, Faculty of Business and Economics, University of Malaya
E-mail: nurulliyana@um.edu.my

Nur Hairani Abd Rahman, lektorė, Malajos universiteto Verslo ir ekonomikos fakultetas
El. paštas: nurhairani@um.edu.my

Nurul Liyana Mohd Kamil, lektorė, Malajos universiteto Verslo ir ekonomikos fakultetas
El. paštas: nurulliyana@um.edu.my