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Descriptive Study on the Level of OSH Awareness Among UiTM Cawangan Pulau Pinang Staff

Rosley Jaafar[1*], Norazah Umar[2], Anas Ibrahim[3], Wan Noorli Razali[4]

[1]School of Mechanical Engineering, College of Engineering, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Pulau Pinang, Malaysia

[2]Department of Computer and Mathematical Sciences, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Pulau Pinang, Malaysia

[3]School of Civil Engineering, College of Engineering, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Pulau Pinang, Malaysia

[4]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Pulau Pinang, Malaysia

Authors' Email Address: [1]rosley110l@uitm.edu.my,* [2]norazah191@uitm.edu.my, *[3]ceanas@uitm.edu.my, [4]wannoorli093@uitm.edu.my*

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*Corresponding Author

ABSTRACT

Safety and health are important factors of any organization to ensure smooth and effective functioning. Occupational safety and health (OSH) awareness among the workers in the prevention of occupational injuries and illness. Various programmes have been implemented by the government and private organizations to increase the knowledge and awareness of OSH in the workplace including among institution higher learning staff in Malaysia. A study was undertaken to identify factors influencing the awareness level of OSH among the staff of Universiti Teknologi MARA (UiTM) in Pulau Pinang Malaysia. A self-administered online questionnaire was distributed to the staff through UiTM email and 193 staff had responded. The questionnaire covered 43 questions and was divided into seven (7) factors that influence awareness levels. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20 and presented in descriptive statistics. The study revealed that the highest level of awareness factor was OSH policy with a mean score of 4.90 while the lowest level factor was safety and health committee with a mean score of 3.90. The analysis of all factors indicated that non-academic staff awareness of OSH is higher than academic staff with a mean score of 4.51 and 4.41 respectively. The university management should increase the role of the safety and health committee so that it can conduct more safety and health activities such as safety talks, training, and campaign through posters and signage on the campus. Good OSH management is very important to prevent an accident in the workplace towards the development of a safe culture.

Keywords: *Awareness Factor, Occupational Safety and Health, Safety Awareness, UiTM Staff, Malaysia*

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INTRODUCTION

Occupational safety and health (OSH) are the identification, evaluation, and control of hazards (i.e., chemical, biological, and physical agents to psychosocial disorders) associated with the work environment (Montgomery & Kelloway, 2002). Generally, OSH is one of the branches of science for recognition, anticipation, evaluation, and control of the hazards in the workplace to avoid the decrease in quality of health and well-being of workers as this would then have an impact on the surrounding environment and communities (Alli, 2008). The government has been increasing the requirements on OSH in the work sectors either in the industries or educational institutions. In the education sector, some of the machines and equipment in the workshop or laboratory have the potential to contribute to an accident if it is not handled properly according to its standard operating procedures. There are various machines, equipment, and hazardous materials in the workshop or laboratory which need special attention regarding safety procedures.

Knowledge and awareness of OSH are important factors in the prevention of occupational injuries and illnesses. Awareness activities can be used to reinforce positive attitudes, working behaviour, and a safety culture among the workers. Effective OSH programs have significant benefits for both employers and employees. Employers, employees, and the public should care about OSH for economic, legal, and moral reasons (Montgomery & Kelloway, 2002). OSH requires cooperation among multiple stakeholders which are the government, employers, and employees where each has a role to play in enhancing safety and health outcomes. The government agencies and private sectors have implemented various programmes and training to increase the knowledge and awareness of OSH in the workplace. Most countries including Malaysia have developed their law in accordance with the standard to handle safety and health issues. The regulation of OSH is used to prevent the probability of accidents, reduce the damage to accidents, and save the cost of investment. Occupational Safety and Health Act (OSH Act) 1994, was established in Malaysia in February 1994.

Every worker has the legal right to safe working conditions under OSH acts (OSH, 2001). However, the statistics from the Department of Occupational Safety and Health (DOSH) Malaysia revealed that the investigated total number of occupational accidents in all sectors has leapt from 3635 cases in 2017 to 5031 cases in 2018 (DOSH, 2020). Safety and health issues are not just a concern in the commercial industries but also in the institutions of higher learning especially for those who are directly or indirectly involved in the handling of machinery and chemicals and are at risk. Such group of people can also be found at Universiti Teknologi MARA Cawangan Pulau Pinang (UiTMCPP). The workforce is always exposed to the risk of accidents at work. Accidents can occur anytime in the laboratories, workshops, and plants available at UiTMCPP and the number of accidents and injuries would increase if the machines and equipment were not handled correctly according to the procedures, good practices, and care (Goetsch, 2011). Referring to the situation faced by UiTMCPP staff, their level of awareness to comply with occupational safety and health regulations provided by UiTMCPP should not be taken lightly. Therefore, this study was conducted to identify the factors to the staffs' awareness of the OSH and the level of awareness between academic and non-academic staff.

LITERATURE REVIEW

The level of knowledge of OSH among healthcare professionals in Malaysia was moderate where the doctors showed good OSH knowledge compared to other categories of healthcare workers (i.e., nurses and medical support staff) and the poorest scoring marks were the administrative staff (Lugah et al., 2010). Thus, more effort is required to promote OSH knowledge to healthcare professionals. The research study by Firdaus et al. (2013) found that the level of safety and health awareness in the workplace among 50 lecturers in the Mechanical Engineering Department, Politeknik Tuanku Sultanah Bahiyah, Kedah Malaysia was high with a total mean score of 4.23. The safety and health factors that were studied for their research were safety policy, safety procedure, safety training, safety equipment, safety committee, safety commitment, and safe environment. Safety training was the major factor

affecting the worker's awareness of occupational safety practices at one logistic company in Malaysia with a mean score of 4.2 but the factor of safety policy and safety committee was not much affected by this (Siti Nakiah et al., 2015). The research report stated that safety awareness standards emerged as a very important factor compared to the other six factors that were measured in the study of perceptions of employees in the steel processing multinational company in South Africa (Mojapelo et al., 2016). The other six factors are information and training, employee behaviour, the role of the supervisor, health and safety reporting mechanisms, workplace safety inspection, and workplace environment. The management of the steel industry can utilise the results to identify and direct the attention of the occupational health and safety factors in their intervention programmes.

A study by Noorhasimah et al. (2017), indicated that the level of awareness of safety behaviour, the safety of rules and procedure, safety training, safety promotion and policy, safety communication and feedback, workers involvement, and management commitment were high among Malaysian small and medium enterprise workers. Awareness knowledge of the workers needs to be improved especially in terms of law and regulation. Good OSH management is important to maintain a high-level result among the workers and to make sure the safety behaviour and safety management were in line with the awareness knowledge and behaviour practices. Hence, it can prevent accidents, ill health, and injury at the workplace. Sujan et al. (2018) in their research report stated that among the 400 automobile repair artisans in Kathmandu, Nepal, the awareness of the occupational hazard and use of personal protective equipment is very low, and those who were unaware of occupational hazards expressed three times more disliked to use the safety measure compared to those who were aware of it. Hence, awareness interventions such as pre-service training, enforcement of the regulations, and promotion of safety advocacy were suggested to raise their awareness.

Safety policy, procedure, training, tools and equipment, OSH committee, commitment, attitude, and working environment were the influencing factors studied by Faiqah et al. (2019) among the staff and undergraduate students in Universiti Teknologi Malaysia. The study found that the respondents have a high level of awareness of OSH with a mean score of 4.26 and 4.14 for staff and students respectively. It shows that the staff was at a higher level than the students due to having more experienced and knowledge of OSH. A study by Nur Shafini et al. (2020) conducted among the workers in the Malaysian manufacturing sector revealed that employee involvement, management commitment, and workplace environment were the influencing factors of workplace safety. In conclusion, occupational safety and health training are very important and the best way to educate and raise awareness about occupational safety and health among workers. It is important to produce many highly skilled workers who are knowledgeable on safety aspects. It all depends on the government and private sector efforts to administer programs and activities by providing more systematic and effective guidelines such as holding, courses, awareness campaigns, and providing standard operating procedures.

METHODOLOGY

This study is a survey of knowledge and awareness of occupational safety and health at the workplace among the academic and non-academic staff of UiTMCPP Malaysia. The study was conducted on 193 staff of which 158 were academic staff and 35 were non-academic (i.e., technical staff). Both categories of staff were involved with high-risk machinery or equipment for teaching and learning either in the workshop, kitchen, laboratory, or fieldwork. The respondents are lecturers, assistance lecturers, assistance science officers, assistance engineers, chefs, and assistance chefs from the Permatang Pauh and Bertam campuses of UiTMCPP.

The questionnaire is divided into two parts in which part one is the background of the respondents and part two is the occupational safety and health questionnaires. The contents of part two were used to determine the factors influencing the awareness of occupational safety and health. It is divided into seven sections: i. Occupational safety and health policy; ii. Standard operating procedure; iii. Equipment; iv. Training; v. Safety and health committee; vi. Commitment and attitude; and vii.

Environment. These seven sections are known as the factors employed to determine the level of OSH awareness of the respondents for academic and non-academic staff. Most sources of the questionnaires are adapted from a previous research study by Durrisah et al. (2004) and the questions were modified to meet the research objectives. The total number of questions was 43. The questionnaire method was used to determine the response from the respondents where five rating levels according to the Likert Scale which is 1 – strongly disagree; 2 – disagree; 3 – unsure; 4 – agree; and 5 – strongly agree.

The respondents for this study were selected through a simple random sampling method. The estimated number of staff involved as total population size, N, was 526 people and the required sample size, S, was 217 people were determined from the table. In determining the sample size from a given population, there were no required calculations if the table is utilised (Robert & Daryle, 1970). The distribution of the online questionnaire to the staff was made through the UiTM email. The total number of staff who answered the questionnaire was 193, which counted as 88.9% of the required sample size (n=217) or 36.7% of the total population size (n=526). The data is considered the primary data and no other sources of data were used. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20 and presented in descriptive statistics which are in percentage, frequency, and mean.

A pilot study is the first step of the entire research and a small sample size is used to assist in the modification and planning of the main study and analyse its validity (Thabane et al., 2010). A trial study was carried out before a research design is finalised to assist in defining the research question and testing the reliability and validity of the proposed questionnaire. A pilot study sample size suggested is between10 to 30 respondents (Isaac & Michael, 1995). This pilot study was conducted on 35 related respondents of academic and non-academic staff.

RESULTS AND DISCUSSIONS

Pilot Study

Cronbach`s Alpha or coefficient alpha (α) is one way of measuring the strength of the internal consistency or reliability of any given measurement which is a consistent measure of a concept, a set of scales, or test items. The recommended Cronbach's Alpha value and internal consistency were used in this study as a rule of thumb for interpreting alpha as shown in Table 1 (Stephanine, 2020). Based on Table 1, if the value of the alpha coefficient is less than 0.6, i.e., poor reliability, it is necessary to improve the items in the research instrument to increase the value of the alpha coefficient.

Tabel 1: Rule of thumb of Cronbach's Alpha

Cronbach's Alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

The pilot study was conducted on 35 respondents. The result of the reliability test of the pilot study is shown in Table 2 where it indicates the Cronbach Alpha ranging between 0.69 and 0.93 for each section. The section on occupational safety and health policy have the highest (0.93) alpha coefficient while the lowest (0.69) is on training. The respondents seemed to lack training on safety and health with Cronbach`s alpha being 0.69 and similarly, they were also less knowledgeable and aware of the standard operating procedure in which the alpha value is 0.74. Other than that, the other items have an alpha value higher than 0.8. The overall value of the alpha coefficient for the seven

sections is 0.85, which shows that the questionnaires had good reliability and consistency. It means that all the questions in the questionnaire were acceptable.

Table 2: **Reliability test result of a pilot study**

Section	No of items	Cronbach's Alpha
Occupational safety and health policy	4	0.93
Standard operating procedure	5	0.74
Equipment	6	0.89
Training	4	0.69
Safety and health committee	8	0.81
Commitment and attitude	8	0.89
Environment	8	0.89
Overall	43	0.85

Demography

The analysis of the data is based on the 193 respondents who answered the questionnaire of the study. The analysis data was divided into two parts. The first part is the demography or personal background of the respondent, and the second part is OSH awareness level factors. The data gathered was classified as the personal background of the respondents based on gender, age, category of staff, and education. Table 3 shows the detailed analysis of the personal background of the respondents. In this study, most of the respondents were male (54.4%) and the remaining were female (45.6%). Based on the data acquired, the largest age group of the respondents is 31 to 40 years old (58.1%), the second-largest is 41 to 50 years old (32.1%), and none from the age below 20 years old. Most respondents were academic staff (81.9%) and the largest education group level is Master holder (53.4%) followed by the PhD holder (23.8%).

Table 3: Socio-demographic of the respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	105	54.4
	Female	88	45.6
Age (years)	< 20	0	0
	20 – 30	6	3.1
	31 – 40	112	58.1
	41 – 50	62	32.1
	> 51	13	6.7
Staff category	Academic	158	81.9
	Non-academic	35	18.1
Education	Ph.D	46	23.8
	Master	103	53.4
	Degree	7	3.6
	Diploma	27	14.0
	S.T.P.M	1	0.5
	Certificate	7	3.6
	S.P.M	2	1.0

Note: S.T.P.M = Sijil Tinggi Pelajaran Malaysia; S.P.M = Sijil Pelajaran Malaysia

Level of OSH Awareness

The interpretation of the level of awareness possessed by the respondents in this study is based on the 5-level scale of the mean score introduced by Best (1981) and Degang (2010) as shown in Table 4. The very high and high level (3.5 – 5.0) range indicates that the respondent has extensive knowledge of OSH awareness and high confidence about details. A moderate level (2.5 - 3.49) indicates a moderate knowledge of OSH but with some uncertainty about details. Low and very low level (1.0 – 2.49) indicates inadequate or less knowledge of OSH with less uncertainty about details.

Table 4: Interpretation of mean score of motivational levels

Scale	Mean range	Motivational Level	Score range
5	Strongly agree	Very high	4.5 – 5.0
4	Agree	High	3.5 – 4.49
3	Unsure	Moderate	2.5 – 3.49
2	Disagree	Low	1.5 – 2.49
1	Strongly disagree	Very low	1.0 – 1.49

The factors of OSH awareness in this research were occupational safety and health policy, standard operating procedure, safety equipment, safety training, safety and health committee, commitment, attitude, and working environment. The mean score results for each factor were presented in Table 5. As shown in Table 5, the highest level of awareness factor is occupational safety and health policy with a mean score of 4.90 while the lowest awareness level is safety and health committee with a mean score of 3.90. The OSH policy is the highest than other factors and the lowest factor was the safety and health committee. It means that the factor of OSH policy is the dominant factor that affects the knowledge and awareness level while the fewer affected factor was the safety and health committee. It indicated that the factor safety and health committee need more attention from the university management, and it is required for an intervention to ensure awareness level will be at a better level. Occupational safety and health policy, standard operating procedure, and commitment and attitude marked a very high level of awareness, and the other factors were high level. It is clearly shown that the workers have high knowledge and understanding of the component of these three factors. The finding of the present study agrees with the previous study by Faiqah et al. (2019) who studied safety awareness as an influencing factor of safety policy among the staff in Universiti Teknologi Malaysia. The author studied the safety procedure, training, tools and equipment, OSH committee, commitment, attitude, and working environment where it was found that there was a high level of awareness in OSH with an overall mean score of 4.26 and the safety policy was the highest factor (mean score = 4.60) while the safety committee was the lowest factor (mean score = 3.72).

The overall mean score was 4.44 which is a high level. It means that the level of OSH awareness among this group of staff in UiTMCPP was high. Although the awareness level is high, the safety and health committee factor did not contribute much to the level of the workers' awareness as the mean score is 3.90. Perhaps the reason is the committee may not be doing their job actively as 44% were unsure and 12.5% agreed that the OSH week is not conducted by the committee. Besides, 38.3% were unsure and 13.5% agreed that the committee does not conduct occupational safety activities such as safety talks, fire drills, and first aid regularly. Most of the safety and health committee member are academic staff whose time is focused on their daily commitments such as teaching, researching, writing, and academic administration, leaving them little time to play their role as committee members. Previous studies have revealed several factors that influence staffs' awareness of safety and health in various industries that differ from the results of the present study. Altabbakh et al. (2015) conducted a study to measure the factors of safety training, knowledge, and attitude of the engineering undergraduates at Missouri University of Science and Technology, United States of America. They found that safety knowledge is the most influential factor in the undergraduates' safety and health awareness levels.

Another study by Muhammad and Rosmah (2018) on the OSH knowledge, attitude, and training factors among the workers in DENSO, Malaysia revealed that the training factor was the most dominant factor influencing the staffs' level of safety awareness and occupational health. The research conducted by Nor Suhaily et al. (2018) showed that the awareness level of safety and health among the workers at Amsteel Mill Sdn Bhd was high with an average mean score of 3.79. The plant and material factors were found by the author to be the highest (mean score = 3.89) while the safety policy was the lowest (mean score = 3.84). As stated in section 30 (1) of OSH Act 1994, every employer should establish a safety and health committee if the employer has more than 40 workers to enforce the safety regulation in the workplace. The main function of the committee is to investigate any related matter arising from the workers or employers such as complaints and incidents and to keep under review the measures taken to ensure the safety and health of workers at the workplace were guaranteed (DOSH, 2011). The committee and employer must always be in good cooperation and consult on safety and health matters. The employer is responsible for preparing a written occupational safety and health policy and ensuring that it is prominently displayed in the workplace.

Table 5: Level of OSH awareness

Factor	Mean score	Standard Deviation	Rating
Occupational safety and health policy	4.90	0.30	Very high
Standard operating procedure	4.59	0.54	Very high
Equipment	4.34	0.75	High
Training	4.48	0.66	High
Safety and health committee	3.90	0.91	High
Commitment and attitude	4.63	0.51	Very high
Environment	4.22	0.74	High
Overall	4.44	0.63	High

Table 6 shows the results of the mean score of the factors employed to determine the level of OSH awareness of the respondents for academic and non-academic staff. The overall mean for non-academic staff is 4.51, higher than the overall mean for academic staff which is 4.41 but the mean score value has not much difference which is 0.1 (2.2%). Although the percentage difference is small, the category of OSH awareness is at a different level. The value indicates the very high level of knowledge and awareness among non-academic staff towards OSH while the high level among academic staff. The reason is non-academic staff were more experienced, aware, observant, and always practised safety in the workplace. Furthermore, their daily works are in the workshop, laboratory, and fieldwork. In terms of the factor of awareness of OSH that was studied, the academic and non-academic staff have the same factor of a very high level of awareness of OSH policy. Similarly, the safety and health committee is at a high level.

Table 6: Level of OSH awareness of academic and non-academic staff

Factor	Mean score	
	Academic staff	Non-academic staff
Occupational safety and health policy	4.93	4.76
Standard operating procedure	4.59	4.57
Equipment	4.27	4.63
Training	4.46	4.52
Safety and health committee	3.84	4.18
Commitment and attitude	4.63	4.63
Environment	4.20	4.30
Overall	4.41	4.51

This finding is similar to the result reported by Baizurah et al. (2016) which showed that the awareness level of safety and health among staff and students in the laboratory and workshop of an Engineering Technology University campus of UniKL MSI, Kedah Malaysia were high with an overall mean score of 4.13. The safety procedure factor was the highest (mean score = 4.53) while the safety committee was the lowest factor (mean score = 3.35). The overall mean for students was 4.07 were lower than the overall mean for staff which is 4.19 because the students were less experienced in handling the equipment in terms of safety. All respondents agreed that safety is important and needs to be practised. The university management should increase the role of the OSH committee, the training and safety programmes, and put up signage and posters around the campus. Occupational safety and health management must manage and organize the safety and health activities for the workers. The goal of the organizational safety and health program is to reduce occupational injuries and illnesses and the development of a safety culture. Occupational Safety and Health Administration (OSHA) is the government arm to sets and revokes safety and health standards, conducts inspections and investigations, petitions the courts to take appropriate action, assesses penalties, against unsafe employers, provides injury prevention consultation, provides safety training, and keep maintains a statistics database of safety and health (Goetsch, 2011).

CONCLUSION

In the present study, seven factors that influence the awareness of occupational safety and health among the staff of UiTMCPP Malaysia were highlighted. A questionnaire survey was conducted and collected 193 responses from academic and non-academic staff. Descriptive analysis was carried out by examining the percentage, frequency, and mean. The findings of this study revealed that the level of staff awareness of OSH was high with an overall mean score of 4.44. It was found that the highest level of awareness factor was occupational safety and health policy with a mean score of 4.90 while the lowest awareness level was safety and health committee with a mean score of 3.90. The analysis of all factors indicated that non-academic staff awareness of OSH is higher than academic staff with a mean score of 4.51 and 4.41 respectively. Hence, this study proposes that the safety and health committee is the key to the success of OSH activities and intervention programmes and must be strongly supported by the university management. OSH campaigns, accident prevention training, poster, safety talk, and other such activities should always be held and distributed to raise awareness and concern regarding OSH in the workplace. As a result, a better level of safety awareness among staff can be achieved. Although all parties have their role in OSH, the organizational management team is the most pivotal. As the present study only covered the staff in UiTMCPP, future research should extend to cover every UiTM campus and public institution of higher learning. Only then the most accurate result can be produced and concluded regarding OSH awareness among staff and relevant actions can be taken by the university management and the Ministry of Education.

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