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Worker's Perception Towards Occupational Safety and Health (OSH) Training at Plastic Manufacturing Company in Senai, Johor

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Abstract: A high rate of injury and fatality in manufacturing industries occurred due to the insufficiency in Occupational Safety and Health (OSH) training. By that it's important to investigate type of OSH training implemented and worker's perception toward the OSH training at workplace based on worker's safety awareness and supervisor roles. The aim of this study is to measure the correlation between OSH training and worker's awareness and supervisor roles. A quantitative questionnaire consists of multiple-choice questions and 5-Likert scale from 1 being 'Strongly Disagree' to 5 being 'Strongly Agree' was distributed among production workers at a plastic manufacturing company in Senai, Johor. The findings indicated the worker's perception is significantly high towards OSH training based on worker's safety awareness (M = 3.59, SD = 0.82) and supervisor roles (M = 3.6, SD = 0.9). There is a significant correlation between OSH training and worker's awareness ($r = -0.442$, $p > 0.01$) and supervisor roles ($r = -0.376$, $p < 0.01$). The hypothesis 1 and hypothesis 2 were significantly negatively correlated with each other, which giving an insight of future study in OSH training could be explored in wider scopes. Thus, to increase the interest towards OSH training the employer can imply policy on Small and Medium Industry (SMI) Strategic Plan 2020 which associated by DOSH to implement effective OSH practice at the workplace.

Keywords: Perception, Occupational and safety, Awareness, Supervisor roles, Manufacturing

1. Introduction

Globally the International Labour Organization (ILO, 2015) reports that there are more than 313 million non-fatal work-related incidents each year (860,000 each day) and 6,400 fatalities from either work-related injuries or occupational diseases (2.3 million deaths per year, mainly from occupational diseases). It implies that about 15 seconds a worker dies from accidents that are specifically related to employment and there are about 150 workers at employment that have an injury. 4 percent of the

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world's GDP (i.e, $2.8 trillion) represents the cumulative loss of skipped labor days, disruption of manufacturing, medical costs, recovery and insurance (ILO, 2015). Occupational Safety and Health (OSH) is an attempt to detect and monitor dangers, injuries and occupational diseases that can arise at the workplace in such a manner that workers, guests and everyone present at the workplace as well as in their environments are safe and protected from unavoidable risks (Panagiotis *et al*., 2005). There is a significant risk to communities with occupational accidents, illnesses and deaths (Leigh *et al*., 1999). Occupational accidents are unplanned, unintentional or unavoidable events that can result in injury or failure of facilities, disabilities or even death of workers (Jimmie *et al*., 1995). One effective response to such adverse effects is reduced by OSH training to the workers (Schulte, 2005). OHS training refers to current programs that promote OHS-specific skills training (Noe *et al*., 2018). This training typically includes instruction on hazard recognition and control, healthy work conditions, appropriate use of personal protective equipment, emergency protocols and prevention measures. Workers can also be advised to classify specific descriptions of possible hazards (Rodson *et al*., 2010). Finally, OHS training would there to allow workers and employers to become more involved in ensuring the safety in the workplace (Cohen *et al*., 1998).

1.1 Research Background

According to the International Labour Organization (ILO), millions of workers worldwide are at risk of various types of work-related diseases. Occupational diseases such as pneumoconiosis remain widespread, whereas relatively new occupational diseases, such as mental and musculoskeletal disorders, are on the rise with no adequate preventive, protective, and control measures. Despite millions of people being at risk, about 2 million workers die every year from occupational illnesses (Mreme *et al*., 2015). According to United States Department of Labour (2012), Occupational Safety and Health (OSH) training is a valuable tool for training workers and managers on workplace risks and procedures, so that they can perform better and more efficiently. Another role of occupational safety and health training, is to provide workers and managers with a clearer picture of the safety and health program itself, so that they can adapt to its development and implementation (U.S. Department of Labor, 2012). OSH training provides workers, administrators, superiors and vendors the knowledge and skills needed to carry out their work effectively and avoid creating hazards that could place individuals or others at danger (Klane, 2009). Plastic manufacturing companies instead of a small and medium enterprise or large organization, they still need to focus on the worker's safety and health and implement OSH training for their employees. The annual report of Malaysian Plastic Manufacturer Association (MPMA) June 2018 to March 2019 shows that they collaborated with Social Security Organisation (SOSCO) to fluctuate OSH awareness by educating programmes like workshop, train-the-trainers session and seminars. OSH training can be provided outside a formal classroom setting. Peer-to-peer training, on-the-job training, and workplace demonstrations can be effective in conveying safety concepts, ensuring understanding of hazards and their controls, and promoting good work practices. Continuous safety training to be given at all levels of employees as a long-term exercise because training takes time to be effective as learning is a progressive process (Alacchi & Todradze, 1981).

1.2 Problem Statements

Safety training to be important in reducing the rate of workplace accidents (Tam *et al*., 1998). Safety training that includes a higher level of employees would lead to a greater reduction in accident statistics, as it is the most direct way to increase the technical skills and safety awareness of workers (Surienty and Lilis. 2019). According to Vinodkumar and Bhasi (2010), safety training plays an important role in the program of accident prevention and in any OSH program. According to Robson (2010) their review team recommends that workplaces continue to deliver OHS training to employees because training positively affects worker practices. The problem is that accidents occurs even though the training are implemented in workplace. James (2011) presented that inadequately delivered

training are among the key factors resulting in such a high rate of injury and fatality in this sector. Effective OSH training implies improve the favorable behaviors towards better safety practice and upgrade the level of safety behavior. Appropriately, this impacts the way in which workers perform their work, through obtaining knowledge and technical skills, which are useful to tackle hazards efficiently (Ricci *et al*, 2018). Garcia *et al*. (2004) stated that worker's perceptions and experience in relation to occupational health and safety are rarely considered in work-related accident and illness prevention programs. Therefore, it's important to examine worker's perception towards occupational safety and health that given in the workplace. Understanding the type of OSH training is important in order to determine workers perception towards OSH training at the workplace based on worker's safety awareness and supervisor roles and also to measure the correlation between OSH training and worker's awareness and supervisor roles. Furthermore, there is a presence of gap according to James (2011) proposed that recognizing the worker's perceptions of the training they obtain is essential to designing and implementing successful employee training program. Therefore, this study intended to provide essential basis at OSH training in the perspective of worker's perception.

1.3 Research Questions

(i) What are the types of OSH training given to the workers at a plastic manufacturing company?
(ii) What is the worker's perception towards OSH training at the workplace based on safety awareness and supervisor roles?
(iii) What is the correlation between OSH training and safety awareness and supervisor roles?

1.4 Research Objectives

(i) To identify the type of OSH training implemented at the workplace.
(ii) To determine workers' perception towards OSH training at the workplace based on safety awareness and supervisor roles.
(iii) To measure the correlation between OSH training and safety awareness and supervisor roles.

1.5 Scope of the Study

Plastic manufacturing is becoming one of the most important manufacturing sectors (Makin, 1987). Plastic manufacturing started from manufacturing combs and buttons until it reached various production fields such as: automotive, medical equipment, aerospace, construction and consumer goods, as well as toys and packaging and biggest obstacle to the development of this technology is health and safety (Essay UK, 2018). So that, this encourage the study to be focused at a plastic manufacturing company OSH training in Senai, Johor. The target sample size of respondents was expected to be 80 workers. The respondents involved was focused to workers in production department who had participated in OSH training provided by the employer.

1.6 Significance of the Study

Throughout this practice, researcher can be able to illustrates that the worker's perception towards the OSH training at plastic manufacturing companies. By that, local plastic manufacturing industries can able to obtain major issue of this research which is the worker's perception towards the OSH training at the workplace based on worker's safety awareness and supervisor roles. These findings can contribute to the ideas of researcher that to measure the effectiveness of OSH training by types according to the worker's perception and the types of OSH training implemented at the workplace by worker's perception. These results lead to a developing number of studies indicating the need to take a multi-layered approach to OSH training research.

The findings give value to community about the effectiveness of OSH training in improving their technical skills and ability to find out hazards and effect at their workplaces. Employers can be able to measure the worker's safety awareness and supervisor roles.

These findings can contribute to the exploration of relevant knowledge and ideas for future works. These results served as a benchmark and indicating the need to take a multi-layered approach to OSH training research.

2. Literature Review

2.1 Plastic Manufacturing Industry in Malaysia

The Malaysian plastics industry is well developed with a good record of success and is an important contributor to the country's high-skilled and high-income employment. As of the first quarter of 2019, the Malaysian Investment Development Authority (MIDA) reports that over RM18 billion worth of investment has transferred to Malaysia, resulting in more than 1,500 manufacturing ventures and generating more than 100,000 job opportunities in the Malaysian plastics industry (HRDF, 2020). The plastic manufacturing companies market segments are divided into traditional plastic, engineering plastic and bioplastic, where the market demands are achieved by using technology of production such blow molding, plastic extrusion, injection molding and technologies (Mordor Intelligence, 2019). The application of plastic in packaging, electrical and electronics, building and construction, automotive and transportation, housewares, furniture and bedding and other application (Mordor Intelligence, 2019). During the forecast era, the demand for Malaysian plastics is expected to rise at a Compounded Annual Growth Rate (CAGR) of around 4% globally and also stated that the demand increases for food & beverage packaging is the key factor driving the growth of the plastic market studied (Mordor Intelligence, 2019). Furthermore, MPMA (2019) reported that the marginal spike in exports was possibly attributable to constraints on the use of plastic bags in certain European nations. The growth of the plastics industry was mainly driven domestically, with respectable demand from both the electrical, electronic and automotive industries (MPMA, 2019).

2.2 Occupational Safety and Health (OSH) Training

OSHA 1994 is emphasizing on training and another OSH program. Occupational Safety and Health (OSH) training is a form of training aimed at equipping workers with the requisite skills to act safely and prevent injuries at work. Capacity may come in the context of occupational health education, protection skills and improved awareness of risks (HSE, 2005). OSH training started informally in highly industrialized countries such as the United States, sometimes in the context of on-the-job training where a worker learns the skills required to get the job done unhurt (Surienty *et al*., 2016). In the 1970s, the OSHA was formed, health and safety training was standardized, and is implemented by law and policy to ensure that companies provide their workers with health and safety training.

Meanwhile, in this 'industrial' age of OSH training and the practice became prevalent around the world and continues to this day. OSH training has now been a significant aspect of the OSH industry today. Processes in manufacturing industries that use toxic materials require qualified persons to perform carbon emissions and medical inspection, so a safety and health officer and a specialist of occupational health are necessary to maintain adequate workplace supervision. Employers will protect the health, safety and welfare of the workers who work for them as much as feasible is necessary. Additionally, another research identify OSH training has one of the dimensions in safety climate (Xinxia *et al*., 2015). Clarke (2013) research indicates OSH training programs should be implemented into the systems and practices of the business; and safety awareness should be part of the strategic plan of the organization and should be aligned with business goals. Research results were that training programs should be adapted directly to the training requirements of the business (as measured by health and safety evaluation methods); initiatives should be incorporated into the methods and

practices of the organization; and OSH training should be part of the overall business approach and business goals.

In previous study by Robson *et al*. (2010), they essentially examined that OHS training has a beneficial impact on workers and also if higher commitment OHS training has a better influence than lower commitment training. Strong evidence has been found for the efficacy of worker OHS training attitudes, but inadequate evidence has been found for its efficacy in health (i.e., symptoms, accidents, diseases). The analysis team advises that employers strive to provide workers with OHS training, as preparation has a beneficial impact on job activities. Based on research evidence, however, great impacts of training on health cannot be expected. In small and medium-sized enterprises, new workers usually get 'informal' training from senior employees and sometimes they are asked to do their job. In another study (Burke *et al*., 2006), researchers examined the relative efficacy of multiple workplace OSH training approaches aimed at enhancing safety awareness and efficiency and minimizing adverse consequences (accidents, diseases, and injuries). While the outcome suggests that training techniques were more motivating (i.e., involving constructive involvement of workers), workers showed better development of knowledge, and decreases were observed in accidents, illnesses, and injuries. All the training strategies created significant changes in behavioral performance. OSH training requiring behavioral modeling, a significant amount reasonable practice and communication in training is significantly more important than other OSH training approaches.

2.3 Worker's Perception Towards OSH Training

Sharing information and providing OSH training are among the most effective methods workers can use in the workplace to encourage compliance to OSH standards (Scheeres *et al*, 2010). Vredenburgh (2002) revealed that as workers gain training in workplace, they would be most likely to be personally engaged in the safety programme. Workers who have taken OSH training are trained to detect hazards and risky actions and consider the effect. Workers qualified to recognize the related dangers in their workplace should have a better understanding of the dangers. This will enhance their warning and instruction compliance (Vredenburgh and Cohen, 1995). By that review we can analyze that the workers perception towards OSH training is vital to be examined. The findings from James (2011) study of sample made up of construction workers across the United States directly demonstrate that greater comprehension strongly corresponds with improved safety training, so whether the content provided in the training is applicable and understandable to the workers, the opportunity for the learning improves significantly. This finding corresponds with that of Hallowell (2010), who proposes that the application of effective health and safety training contributes to a depletion in recordable injury levels. Mojopelo *et al*., (2016a) explore the perceptions of employees in the steel industry towards occupational health and safety standards in the steel industry in South Africa. The results reveal that in all seven OSH dimensions considered in this study, workers in the steel industry perceived that OSH standards are acceptable. That included knowledge and training, awareness of health and safety, employee behavior, supervisor position, monitoring systems for health and safety, occupational inspection and the workplace conditions. Awareness of health and safety has appeared from such aspects as the most critical aspect for employees (Mojopelo *et al*., 2016a).

Research conducted in 2014 (Rhaffor *et al*., 2014) had examined the perception of employees towards the implementation of safety and health practices in a small-sized organization. The study reviewed seven variables including training, work environment, mechanical, ergonomics, personal protective equipment (PPE), electrical, and noise. Perception on training aspect of perception has scored the maximum mean rating, which indicates that workers' understanding of training is greater than other variables. Certain OSH studies showed that safety training is among the most important factors in improving safety performance (Surienty & Lilis. 2019). Another research evaluates to understand the importance of workers training to the protection of their physical and mental well-being in accommodation sector (Sari, 2009). It was a comprehensive interview-based study that

created them. The outcome of the accommodation companies' data source showed beneficial outcomes worker's OSH training. This can be seen more explicitly by their own sentences that OSH are often offered and preserved by training, and some sort of training to mitigate the hazards of working hours is often known to be useful precautionary measures. Specifically, a SME accommodation company interviewed by Sari (2009) said that someone who has witnessed the disorder and injuries where there is no training understands the training benefits very well, particularly when it comes to the safety and health of workers, training must be the focus. Surienty *et al*., (2016) demonstrate the role of safety training in developing worker's safety behaviour. Two hypotheses were taken from the analytical research. H1: The safety training has a significant positive relationship with compliance with safety. H2: Safety training has a significant positive relationship with the participation in safety. As a consequence, safety training has been shown to have a substantial beneficial relation with compliance with safety ($\beta = 0.42$, $p = 0.01$) as well as participation in safety ($\beta = 0.5$, $p = 0.01$). Hence, it follows hypothesis H1 and H2. This is validated by studies by Nunez and Villanueva (2011), who confirmed that there is a clear connection between knowledge about OSH as well as awareness of safety and a lower incidence of injuries at work.

3. Research Methodology

3.1 Research Design

This study implemented a cross-sectional research design by quantitative approach. Apuke & Oberiri (2017) describes that quantitative method of research deals with the quantification and analysis of variables in order to obtain results. It includes numerical data utilization and analysis using specific statistical methods to address questions such as who, how many, when, where, where, how many and how. Quantitative analysis approaches such as describing a problem or trend by obtaining data in numerical form and analysing it with the assistance of statistical techniques; in particular statistics (Aliaga & Gunderson, 2002). Going through the description above, it can be deduced that the first thing a study discusses or deals with is describing a question (Apuke & Oberiri, 2017).

3.2 Data Collection

(a) Population and Sampling Techniques

The target population of the research is plastic manufacturing company's production workers. This research was conducted at a plastic manufacturing company in Senai Johor. The total population of worker's at the plastic manufacturing company was approximately around 150 to 180 workers. The sampling technique used to choose respondents for this research was purposive random sampling. By that, the respondents were only those workers that were involved in the production department or known as operator workers. The number total of workers from production department of the company are approximately around 80 workers. The targeted sample size of respondents was 80 which are the workers from six workstation from production department. A total of 48 respondents answered the questionnaire and all the responses were used to analyse in this research.

(b) Instrumentation

To gather the data in this research, a quantitative questionnaire was developed so that it's relatively easier to analyze and the format is familiar to most respondents. The questionnaire was incorporated with several multiple-choice questions and 5-likert items will be designed to produce discrete data for analysis. The questionnaire was divided into three sections. The data obtained in section 1 used to provide a general demographic breakdown of respondents. Questions in this section designed to capture general information about respondents. They asked to give information about their gender, age and workstation of the production line. Work experience was also considered in this

section of the questionnaire. Data from section B allows the types of OSH training trained by the workers at the workplace. The respondents were asked to state about their safety at the work environment, hazard that most frequently exposed to them, select the OSH training implement and number of times they have been to the OSH training. In section C data about the workers perception of the OSH training given at the workplace was gathered and this part of the questionnaire adopted from Mojopelo *et al*., (2016a) research. The questions answered in 5- likert scale from 1 being 'Strongly Disagree' to 5 being 'Strongly Agree'. The questionnaire was prepared in bilingual (English and Bahasa Malaysia).

3.3 Data Analysis

The collected data was analyzed using descriptive statistic with the aid of the Statistical Packages for the Social Packages (SPSS) version 25. SPSS is use because it is a flexible, customizable way to get super granular on even the most complex data sets where the questionnaires was coded before entering the data into SSPS for analysis. This gives the researcher, more time to identify trends, develop predictive models, and draw informed conclusions (Ben, 2018).

4. Results and Discussion

4.1 Pilot Test

Pilot test is a preliminary test of data collection process on a small scale to get input on whether or not the devices are likely to operate as planned in a "real world" setting (Rhaffor *et al*., 2014). It helps to detect and remove issues, allows to make immediate improvements or modifications before eventually conduct the actual data collection process from the target respondents (Rhaffor *et al*., 2014). The pilot test was performed with 10 random persons in the industry and validity evaluation of the questionnaire was performed by 2 lecturers from Faculty of Business and technology management for this analysis. From the pilot test data collection, reliability test was conducted. Table 1 shows the item that are includes in the reliability test and Cronbach's alpha (α) value.

Table 1: Reliability test result

Worker's Perception	Cronbach's Alpha (α)
OSH training provided by the employer	0.706
Safety awareness	0.763
Supervisor roles	0.836

Reliability test was indicated to understand the degree of consistency of the indicators whereas the validity narrowly represents the correspondence of the test measure with the "real world" target measure and the reliability reflects the stability of the test measure (Noble *et al*., 2019). The reliability test was analyzed based on using SPSS version 25 and it's based Cronbach's alpha value. Table 2 shows the Cronbach's alpha value of worker's perception towards OSH training at the workplace based on OSH training provided by employer, worker's safety awareness and supervisor roles. In conclusion, the indicators were reliable according the table below, since the values of Cronbach alpha (α) of the indicators were from 0.706 to 0.836.

Table 2: The value of Cronbach's alpha (α) (George & Mallery,2019)

Cronbach's alpha	Internal consistency
α > .9	Excellent
α > .8	Good
α > .7	Acceptable
α > .6	Questionable
α > .5	Poor

$\alpha < .5$	Unacceptable

4.2 Demographic Analysis

Almost 58.3% of the respondents are male and 41.7% of the respondents are female from the total number of respondents (48 people). The most common age range of the respondents were in the age range of 26 to 30 years old (35.4%) and 31 to 35 years old (22.9%). The overall percentage of the respondent's production workstation was in the range of 12.5% to 20.8% which from 6 to 10 respondents for each workstation. Moreover, most of the respondents had 1 to 5 years of work experience which was at 58.3% equals to 28 respondents from the total of 48 respondents.

4.3 Type of OSH Training Implemented at Workplace

From the analysis, it was found that all worker responded acknowledge that the workplace is safe them. The hazard that most frequently exposed to workers at the workplace was noise, second highest in the range was ergonomic and then chemical. Question 3 in Section B was to identify the types of OSH training were participated by the worker at the workplace. The types of OSH training given were general and personal hygiene, first aid, fire drills, usage of personal protective material, ergonomic (force, posture, repetition), proper techniques (manual lifting, use of tools etc.) and stress management. The respondents were asked to answer the question by stating '1' for 'YES' and '2' for 'NO'.

Subsequently, Figure 1 describes the percentage of the types of OSH training that was participated by the worker at the workplace. All the workers have been participated in training about usage of personal protective material that is 100% and 81.3% of the workers participated in fire drill which is almost 39 respondents from 48 respondents. For OSH training about proper technique which applies manual, use of tools and more was attended by 79.2% (38) and 20.8% (10) of the worker are not. The workers attended in training about ergonomic is lower than other types of OSH training (35.4%). Almost half of the workers had been participated in OSH training about general and personal hygiene (58.3%), first aid (47.9%) and stress management (54.2%). The overall the findings represent that almost all of the respondents had attended to most of the OSH training at workplace.

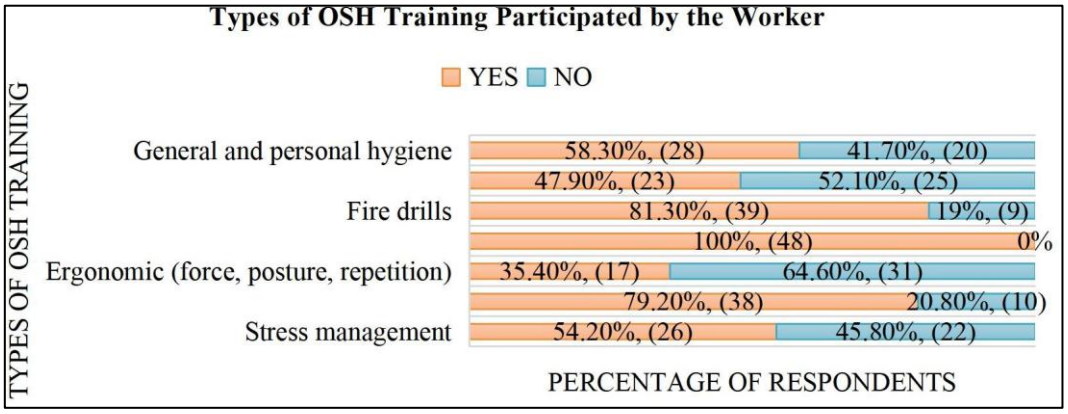

Figure 1: The percentage of the types of OSH training that was participated by the worker at the workplace

Question 4 in section B was to find out the number times the worker had participated in the OSH training at the workplace. The opinion given to answer it are '1 time' (1), '2 times' (2), 'More than 3 times' (3) and 'Not even once' (4).

Figure 2 shows the percentage of the number of times OSH training participated by the workers. For general and personal hygiene training, the result shows that 39.6% for both I times and not even once for the participation. Majority of the workers stated that they had not even once attended first aid OSH training which is 52.1% from 48 respondents and the rest the respondents were participated in it for at least 1 time (29.2%,14 respondents) or 2 times (18.8%, 9 respondents). Fire drill is mostly 1 time practiced by worker, that is 39.6% equals to 19 respondents. The remaining 27.1 % (13 respondents) of the respondents were participated for 2 times, 14.6% of them were participated for more than 3 times and 9 respondents (18.8%) had not even once participated in fire drills. Moreover, 41.7% (20 respondents) had been participated in training about usage of personal protective material, the other 28 respondents had been participated for 2 times (39.6%) or more than 3 times (9%). Ergonomic OSH training result represents there are 64.6% of the workers not even once participated in it. Out of 23 (47.9%) respondents from 48 respondents had been to proper technique training for 1 time, for 2 times 27.1% (13 respondents) of respondents and 6.3% (3 respondents) of respondents for more than 3 times, but only 18.8% (9 respondents) of them not even once been for that OSH training. For stress management training 41.7% (20 respondents) of the respondents had been for 1 time only, but 45.8% (22 respondents) of the respondents not even once participated in it and the rest of them participated for 2 times (6 respondents).

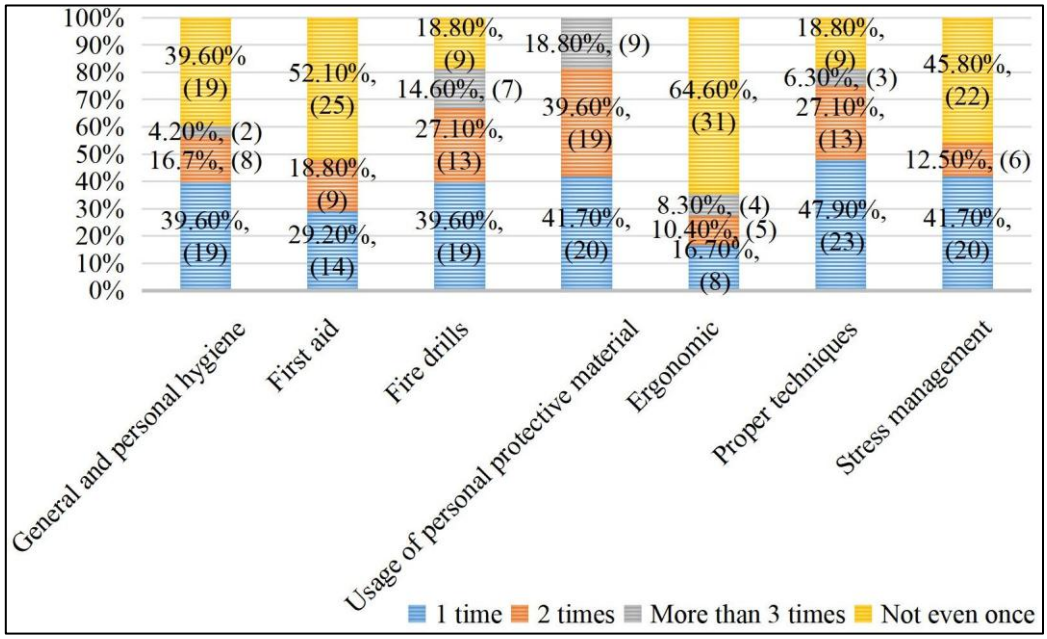

Figure 2: The percentage of the number of times OSH training participated by the worker at the workplace

4.4 Worker's Perception Towards OSH Training Based on Worker's Safety Awareness and Supervisor Roles

Results for the worker perception in this section was measured using 5-likert scale. To determine the worker perception There are 6 indicators regarding worker's safety awareness and 4 indicators regarding supervisor roles to measure the worker's perception towards OSH training at the workplace.

Table 3 consists of mean score analysis of the worker's perception towards OSH training at the workplace based on worker's safety awareness. The mean scores for all the indicators regarding worker's safety awareness were in between the range of M = 3.3 to 3.9 which indicated the worker's safety awareness high. The findings showed that the workers were highly aware that they have a health and safety representative in my workplace (M = 3.89, SD = 0.83) followed by that workers were also highly aware to follow safety procedures at work (M = 3.83, SD = 0.83). It's was analyzed workers had high awareness that they provided with the necessary skills in the company to perform

their work safely followed by the worker's knowledge on the Occupational Health and Safety Act (M = 3.43, SD = 0.98) and all workers were involved in the planning of health and safety (M = 3.45, SD= 1.07106). But, worker's awareness about their rights to the health and safety issues is moderate, M = 3.37, SD = 1.04. Overall, the sample as a whole had relatively showed workers had high perception towards OSH training at the workplace regarding safety awareness (M = 3.59, SD = 0.82).

Table 3: Mean score analysis of the worker's perception towards OSH training at the workplace based on worker's safety awareness

Item	Description	N	Min.	Max.	Mean	Std
C2a	I have sufficient knowledge of the Occupational Health and Safety Act.	48	1.000	5.000	3.437	0.987
C2b	I know my rights as an workers when it comes to health and safety issues.	48	1.000	5.000	3.375	1.044
C2c	We are provided with the necessary skills as workers in the organization to perform our work safely.	48	1.000	5.000	3.583	0.918
C2d	I usually follow safety procedures at work.	48	1.000	5.000	3.833	0.833
C2e	We have a health and safety representative in my workplace	48	1.000	5.000	3.895	0.831
C2f	All workers are involved in the planning of health and safety	48	1.000	5.000	3.458	1.071
	Overall Score	48	1.000	5.000	.3597	0.824

Table 4 demonstrate the mean score analysis of the worker's perception towards OSH training at the workplace based on supervisor roles. The mean scores for all the indicators regarding supervisor roles were in between the range of M = of 3.54 to 3.68 which indicated the supervisor's roles were high. The findings indicated that the workers were highly agreed that supervisor listens to their safety concerns in the company (M = 3.68, SD = 0.97) followed by that workers were also highly agreed supervisor takes their health and safety very seriously (M = 3.64, SD = 0.95). Furthermore, supervisors had highly encouraged workers to adhere with the OSHA (M = 3.54, SD = 0.98) and perform risk assessment on a regular basis (M = 3.54, SD = 0.89). Overall, the sample as a whole had relatively showed workers had high perception towards OSH training at the workplace regarding supervisor roles (M = 3.6, SD = 0.9).

Table 4: Mean score analysis of the worker's perception towards OSH training at the workplace based on supervisor roles

Item	Description	N	Min.	Max.	Mean	Std
C3a	My supervisor takes workers health and safety very seriously.	48	1.000	5.000	3.645	0.956
C3b	Supervisors perform risk assessment on a regular basis.	48	2.000	5.000	3.541	0.898
C3c	Supervisors encourage workers to adhere with the OSHA.	48	2.000	5.000	3.541	0.988
C3d	Supervisor listens to worker's safety concerns in the company.	48	2.000	5.000	3.687	0.970
	Overall Score	48	1.750	5.000	3.604	0.901

4.5 Correlation between OSH Training and Worker's Safety Awareness and Supervisor Roles

Normality test is very necessary because it decides the central trend measurements, dispersion and selection of parametric or non-parametric tests on the basis of normality value (Mishra *et al*., 2019).

Table 5 demonstrates the test of normality using Kolmogorov-Smirnov test and Shapiro-Wilk test. Based on the total number of respondents (48 respondents), this research used Shapiro-Wilk test result to determine the normality. The Sig. value for worker's perception regarding OSH training provided by the employer was $p > 0.05$. For worker's perception regarding safety awareness and supervisor roles also, for types of OSH training were in the range of $p = 0.00$ to 0.35 which $p < 0.05$. From the results, the data was considered not normal because major of the variable's data are not normal. To find correlation between the variables non-parametric test chosen to be done in this research. Spearman correlation test was performed to measure the correlation between OSH training and worker's safety awareness and supervisor roles.

Table 5: Test of normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OSH training provided by the employer	0.118	48	0.091	0.958	48	0.085
Safety awareness	0.104	48	0.200	0.948	48	0.035
Supervisor roles	0.168	48	0.002	0.921	48	0.003
OSH training	0.216	48	0.000	0.887	48	0.000

Table 6 illustrates the findings of the Spearman correlation test of worker's safety awareness, supervisor roles and OSH training which indicates the correlation is significant at the $p = 0.01$ level. The findings indicated that there was a significant negative correlation between OSH training and worker's safety awareness, ($r = -0.442$, $p < 0.01$). The correlation between OSH training and supervisor roles also significantly negative, ($r = -0.376$, $p < 0.01$).

Table 6: Spearman correlation test result of worker's safety awareness, supervisor roles and OSH training

		SA	SR	OT
Safety awareness (SA)	Correlation coefficient	1.000	0.782**	-0.422**
	Sig. (2-tailed)	.	0.000	0.002
	N	48	48	48
Supervisor roles (SR)	Correlation coefficient	0.782**	1.000	-0.376**
	Sig. (2-tailed)	0.000	.	0.008
	N	48	48	48
OSH training (OT)	Correlation coefficient	-0.442**	-0.376**	1.000
	Sig. (2-tailed)	0.002	0.008	.
	N	48	48	48

4.6 Discussions

(a) Type of OSH Training Implemented at Workplace

From the results, it illustrates that almost all of the respondents had attended to most of the OSH training at workplace which were general and personal hygiene, first aid, fire drills, usage of personal protective material, ergonomic (force, posture, repetition), proper techniques (manual lifting, use of tools etc.) and stress management. Particularly the analysis shows that the training about usage of personal protective material was performed by all the workers responded this survey also relate to the fact that OSH training performed to overcome the types of hazards like radiation, noise and chemical that exposed to workers more frequently. PPE is necessary because it requires the safety of the workplace to provide procedures, instruction and guidelines to enable workers to work safely (Yee & Al-Rejal, 2016). So that, company takes initiative to perform usage of personal protective material training frequently which is about personal protective equipment (PPE) that is often an essential

component of worker safety (Flynn & DeLaney, 2017). Thereby, it can be stated that the exposure of chemical hazard to workers was few only due to the frequent implementation of training on usage of personal protective material.

Besides that, for ergonomic OSH training the result represented that 64.6% of the workers not participated in it and it was analysed as second highest hazard type that undergo by the workers due to the intensive work load and repeated non-neutral work posture without proper ergonomics training and reliable equipment had similar effects on occupational health among Malaysian manufacturing workers (Santos *et al*., 2015). Thereby, it can be stated that the company not really focus the ergonomic hazard that frequently exposed by the workers at the workplace. It also can be a not accurate result due to the population of respondents were only 48 production workers from of the company so that, the results could be different if the population of respondents are large. For OSH training about proper technique which applies manual lifting, use of tools and more was attended by 79.2% of the workers due the fact that Section 26, FMA 1967 about training and supervision of inexperienced workers. It stated that "No person shall be employed at any machine or in any process, being a machine or process liable to cause bodily injury, unless he has been fully instructed as to the dangers likely to arise in connection therewith and the precautions to be observed, and has received sufficient instruction in work at the machine or process; or is under adequate supervision by a person who has knowledge and experience of the machine or process". Thereby, OSH training on proper techniques is essentially implemented by the employers and performed by the workers at the workplace.

As well as, the result also illustrated that 54.2% of the workers had attended stress management OSH training not only that they participated in it at least for 2 times on average throughout their years of work experience. By computing the number of times OSH training participated by workers express that workers were participated in it for 2 times according to the mean score. Adding to this, it was clear that the company perform OSH training frequently. Furthermore, Rout and Sikdar (2017) research determined that OSH training frequently given to workers to increases at awareness towards the dangers, harms and safeguards they could have, and that these adverse consequences may be prevented. Mojapelo (2016) also cited that one method to handle and minimize workplace injuries is to upgrade the OSH training as a prevention tool.

(b) Perception Towards OSH Training at Workplace Based on Worker's Safety Awareness

From the findings, the overall the sample as a whole had relatively demonstrated high perception towards OSH training at the workplace regarding safety awareness which represents strong tendency towards the 'agree' position on the 5-Likert scale (M = 3.59, SD= 0.82). This high mean score illustrates that the worker's safety awareness high through the necessary skills from the OSH training given in the workplace. Nunez & Villanueva (2011) also stated individual knowledge and skills resulting in an improvement of workplace safety helps to increase the firm's safety human capital. Moreover, workers have usually followed safety procedures (M = 3.83, SD = 0.83). The OSH training implemented in the workplace acts has an indicator to remind the workers to follow the safety procedures and prevent occupational accidents at the workplace. Hayes (2008) stated that the workers were more likely to obey safety procedure if he or she believed that safety practice was dedicated to a safety at workplace.

According OSHA 1994 Malaysia, a company should have a health and safety representative as Section 29 (2), OSHA 1994 stated that "An occupier of a place of work to which this section applies shall employ a competent person to act as a safety and health officer at the place of work". Followed by that, Section 29 (3), OSHA 1994 applied that "The safety and health officer shall be employed exclusively for the purpose of ensuring the due observance at the place of work of the provisions of this Act and any regulation made thereunder and the promotion of a safe conduct of work at the place of work". They also acknowledged that they have health and safety representative (M = 3.89, SD =

0.83) at the workplace. Therefore, the overall result of mean score express that the worker's perception is high towards OSH training based on worker's safety awareness (M = 3.59, SD = 0.82). Supporting to this analysis, a research conducted by Mojapelo *et al*. (2016b) represents a positive linear association between worker's perceptions and awareness ($r = 0.541$; $p < 0.05$).

(c) Worker's Perception Towards OSH Training at Workplace Based on Supervisor Roles

The findings indicated the workers had high perception towards OSH training at the workplace regarding supervisor roles (M = 3.6, SD = 0.9) which represents that the worker's perception regarding supervisor roles was agreed by the most of the workers. Therefore, the finding represents strong tendency towards the 'agree' position on the 5-Likert scale. The finding also illustrates that the supervisors take workers safety and health very seriously (M= 3.64, SD = 0.95) and supervisors listen they're safety concerns in the company which also agreed by 47.8% of workers who answered the questionnaire (M = 3.68, SD = 0.97). Thus, Torner & Pousette (2009) illustrated that the supervisors are responsible for maintaining the safety concern alive among worker; in this manner, the worker's own reflections on concern, participation, and responsibility for safety can be stimulated and "ignorance" mitigated.

Furthermore, the workers highly accepted that the supervisors take risk assessment on regular basis (M = 3.54, SD = 0.89) and encourage workers to adhere with the OSHA (M = 3.54, SD = 0.98). In consequence, Mojapelo (2016) points out that when the supervisor is irresponsible about the implementation of safety regulations, this can have significant consequences for workers, as workers will view the supervisor as someone who does not take their safety seriously, which will lead to a worker's inability to comply with safety regulations because the supervisor has not been able to develop a sense of adherence to the OSHA regulations. Followed by that, Scheeres *et al*. (2010) found out, the exchange of education and the implementation of safety training are among the most important resources that employers should use in the workplace to encourage compliance with health and safety requirements where the supervisors were assigned to do so. After all the supervisors have been at the top of that list because they engage more intensely and regularly with workers at all levels of management (Fang *et al*., 2015). Adding to it, the supervisory position typically entails urging worker to observe and comply with to that OHS regulation which increases the worker's safety awareness (Mojapole *et al*, 2016a). Overall result of mean score demonstrates that the worker's perception is high towards supervisor roles (M = 3.6, SD = 0.9).

(d) Correlation Between OSH Training and Worker's Safety Awareness and Supervisor Roles

Shapiro-Wilk normality test was implemented to determine the selection of parametric and non-parametric test for correlation between the variables to measure objective 3. The analysis indicated that there was significantly negative correlation between OSH training and worker's safety awareness, with $r = -0.442$, $p > 0.01$. Thereby, hypothesis 1 is accepted, as the correlation between OSH training and worker's safety awareness was significant with negative correlation. Meanwhile, the correlation between OSH training and supervisor roles also significant with negative correlation where $r = -0.376$, $p < 0.01$. Thereby, hypothesis 2 is accepted. The negative correlation coefficient represents if the values of one variable increase, values of the other variable decrease (Mukaka, 2012). The negative correlation coefficient represents if the values of one variable increase, values of the other variable decrease (Mukaka, 2012). By that mean, the negative correlation between OSH training and worker's safety awareness and supervisor roles might be explained by increases level of worker's safety awareness and supervisor roles might reduce the interest in OSH training. Zierold *et al*. (2012) research among young workers determined that though most workers received OSH training, many stated that they individually did not require OSH training as it is a common awareness among the workers and trained by method that seem to be boring, to be added on the repetition of training already gives them safety awareness in workplace. Therefore, interest toward might reduce training, as the workers provided the same type of training that already enriched their safety awareness. On the

other hand, there might be the possibility of other variables to be correlated to OSH training and many variables that reduce the interest towards OSH training.

5. Conclusion

These findings contributed to the ideas of research to identify the type of OSH training implemented at the workplace and to determine worker's perception towards OSH training at the workplace based on worker's safety awareness and supervisor roles. Majority of the respondents had attended to most of the OSH training at workplace especially training about usage of personal protective material and participated in all types of OSH training for at least 2 time on average. Worker's perception is significantly high towards OSH training based on worker's safety awareness and supervisor roles. Subsequently, the correlation between OSH training and worker's awareness and supervisor roles were significantly negatively correlated with each other. Therefore, in order to increase the interest towards OSH training the employer can imply policy on Small and Medium Industry (SMI) Strategic Plan 2020 which associated by DOSH to implement effective OSH practice at the workplace. The identified programmes in this plan initiated to reduce the work accident and disease among SMI, by enhancing awareness, responsibility and commitment and interest of employers as well as employees towards OSH, to upgrade the comprehensiveness of OSH training, administration system and management of the company (DOSH, 2020).

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