

[MAN 23] OCCUPATIONAL SAFETY AND HEALTH PRACTICES IN MANUFACTURING INDUSTRY

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ABSTRACT

In today's world, the economic growth rapidly in industrialization has been given a significant impact of distributions of income and quality of life it is also led in enhance the number of workplace accident in manufacturing industry. In Malaysia, people are still not much aware about the safety and health for the worker on manufacturing industry. Therefore, this study aims to examining the Safety and Health Practices that can be apply in manufacturing industry and identify the benefit of Occupational Safety and Health Practices. Besides that, this study also identified types of hazards, injury and accidents happen in the workplace. This study was carried out in a case of manufacturing sector in Malaysia. The data were collected via an interview with Ong Chuan Hin Rice Mill Sdn Bhd. Qualitative method was employed to achieve all the objectives. Therefore, the data referred in this study consist of the primary and secondary data. Besides, it was found that the selected industry was involved the Safety and Health Practices to reduce the accident happen in workplace. The significant from this study is to improve the knowledge about the Safety and Health Practices to the workers and employees to reduce the accidents in the workplace.

Keywords: *occupational safety and health, safety and health practices, OSHA, manufacturing industry*

INTRODUCTION

In the manufacturing industry, workplace accident is cannot be avoided and it can be cost billions of money each year (Noor Aina Amirah, 2013). Nowadays, all organizations in Malaysia should be exposed to Occupational Safety and Health Practices (OSHP) to avoid accident in the workplace because the accident happen in the workplace can affect operation of business around the world (Hamid, 2015).

Occupational Safety and Health Practices (OSHP) are the strategies, policies, activities and procedures that can be implementation by the organization targeting safety of their employees (Vinodkumar, 2010). Safety and Health Practices may reduce the chances of an accident happen in the manufacturing workplace (Hamid, 2015). Prevention of accidents can be prevented by the existence of awareness among employees, industry and wider society. Company that provides a well OSHP can affect employee to enhance their safety performance in workplace. In addition, a good OSHP apply in the organization will reduce the accident rate and also led a lot of benefits for the organization (Yueng-Hsiang Huang, 2006).

STATEMENT OF THE PROBLEM

The workplace accidents, injuries, illnesses and diseases continue as a significant problem in manufacturing industry (Paivi Hamalainen, 2006). In Malaysia, people are still not much aware about the safety and health for the worker on manufacturing industry. They are lack of knowledge on safety consciousness. Several studies shown that, employer is little or no attention to employee health and safety (Adebiyi, 2009). Nowadays, we are always hearing that the accident cases are happened in manufacturing industries (Gillespie, 2016). According the statistic of Occupational Accidents by Sector until December 2015 from DOSH, the number of manufacturing industrial accidents is considerably high than other sectors. The result showed that the number of accidents in manufacturing sector was increased 374 victims from 2014 to 2015 in Malaysia (DOSH, 2015). Accidents at work places will impact negatively on countries and the organizations such as the loss of life, property or damages (Yom, 2011). The accident will always happen because of poor or do not care to act on Occupational Safety and Health Practices (OSHP) in several companies (Yusof, 2008). Thus, we can conclude that OSHP in manufacturing industry are very important to be prevents and eliminate the accidents or injury in the workplace (Said, 2015).

The main objectives of this research as below:

- a. To identify the safety and health practices that was applied in manufacturing industry to prevent injury.
- b. To identify the benefits of occupational safety and health practices in manufacturing industry.
- c. To identify types of hazard, injury and accident happen in the workplace.

LITERATURE REVIEW

For this study, the researcher had been reviewed several literatures regarding the occupational safety and health practices, benefit of occupational safety and health practices, types of hazard and types of injury or accident happen in workplace.

Occupational safety and health practices (OSHP)

Based on Vinodkumar (2010), Occupational Safety and Health Practices (OSHP) are the strategies, policies, activities and procedures that can be implementation by the organization targeting safety of their employees. OSHP are encompassed many safety-related components. They are management commitment, safety training, workers involvement, safety rules and procedures and safety promotion policies.

Management commitment

All levels inside the management should commit inside and demonstrate their support of the safety and health program to make the safety management effective (Shekh, 2015). At the time when formation of a company, the goals of safety, safety programs, policies, plans and procedures should be documented. Employers must have fully committed into the safety training program to teach their employees to handle risks (Hussain, 2009). A company's management is responsible for most of safety issues in the organization because they has control over of the available resources (Othman, 2012).

Safety training

Company should provide the training to all levels of employees. Through training, employee can improve their knowledge, behavior and skills. Training must be followed by a program based on a goal-setting and performance feedback. Safety training can be more predictable of the accident (Aseparori, 2011). The training programs should include the topics such as promotion of safety, accident prevention, safety practices and compliance, personal protective equipment, accident and emergency response, equipment and machinery chemical, workplace hazards and worker involvement (Hamid, 2015). All the worker need to be given appropriate types and adequate amount of the safety training in order to improve safety awareness to face daily hazards, risk and danger in their workplace. Effective training programs can reduce the number of accidents, injuries, legal liability, worker compensation claim, property damage, and the worker missed time from work (Othman, 2012).

Worker involvement

Employees inside the workplace are most qualified personal to make the suggestion for making improvement and they are reliable to discuss about safety and health issues which can affect the workers in the organization (Othman, 2012). In addition, employees should be encouraged to give their feedback and recommendations on the safety-related matters and also can suggest the ways to improve the work processes and activities that can be more safety (Taufek, 2016).

Safety rules and procedures

Vinodkumar (2010) describes the safety rules and procedures that are well established by organization can improve the safety behavior of employees at workplace. Safety rules and procedures related matters such as regular safety inspection, supervisor enforcing safety rules and effective safety and health rules, procedures in workplace to prevent accident. The safety rules and procedures can sets up the standards of behavior of the employees, and establish safety system to correct workers' safety behaviors in order to help employees understand the safety rules and procedures (Said, 2015). By the ways, the management has to make an effort about the communicating the rules and procedures in a language that can easily understand by the employees (Shamsudinb, 2016).

Safety promotion polices

Safety promotion policies of management include recreational activities, rewards, and incentives to motivate employees to be perform safety in the workplace (Shamsudinb, 2016). In addition, safety promotion policies can encourage employees about the hazard control programme and motivate them to take self-protection action towards the safety management (Othman, 2012).

Benefit of occupational safety and health practices (OSHP)

The implementation of OSHP has been shown to significantly reduce the incidence of accidents, illness, injuries and fatalities (Hussian, 2013). In addition, OSHP helps the business to demonstrate to all stakeholders that their business is socially responsible, improvements in the image, brand value and wider organization's reputation of the firm (Warner, 2013). It also help to maintain and enhance confidence of investor and also help to develop positive stakeholder engagement at all levels enables company to meet customers' expectations, and encourages worker to stay longer (Federation, 2016). Moreover, OSHP also help to increase competitiveness of the organization. OSHP

created the monetary benefit for the business (Work, 2007). Businesses with safety programs in workplace can benefit from reduced product loss and equipment damage as well as decrease compensation costs (Daniel, Benefit of OHS, 2011).

Types of hazard in manufacturing industry

Noise

Loud noise mean the noise is loud make someone should raises up their voice to be heard when speaking to the other people at the one arm's length away from them (Cax, 2015). The studies suggests that this definition corresponds roughly A-weighted background noise level of 85 dB(A). The noise can cause ear damage (Lindahl, 2008).

Chemical hazards

The example of chemical is cement, cleaning products, acetone, hydraulic oil, disinfectants, solvents, resins, paints and detergent (Sahiri, 2015). The workers working with the chemicals no matter how of the duration of exposure with chemical was classified as chemical hazards. The chemical hazard exposure to the workers in manufacturing is by the skin contact (Lindahl, 2008).

Airborne hazards

Types of airborne hazards such as dust or gases, vapours, smoke or fumes, forklift gas, glue vapours or spray painting fumes no matter of the duration of exposure, can be classified as expose to the airborne hazards (Lindahl, 2008).

Sun exposure

Sun exposure defined as the people who work outside direct to the sunlight. It includes transport workers and office workers if they have exposure under the sunlight directly even they was inside a vehicle. Moreover, if a worker was expose sunlight above four hours per day, it classify as sun exposure (Lindahl, 2008).

Vibration

The equipment and tools cause the vibration hazard are angle grinders, drills, electric saws, forklifts, milling machines, chainsaws and vehicle. This can cause numbness, reduce the ability to feel vibrations, heat and cold. Moreover, it cause the problem in muscle, joint, tendon and back problems (Lindahl, 2008).

Types of injury/accident happen in workplace

Accidents can happen at any time but when it happens in the workplace it have many considerations need to be make. Accidents are different types which can be classified as death, permanent disability, and non-permanent disability (Shekh, 2015). Here have 4 of the most common accidents in the workplace:

Overexertion injuries

Overexertion injuries activities include lifting, pushing, pulling and carrying (Coreland, 2013). It can make the musculoskeletal disorders (MSDs) such as pain and injuries to arms, legs, joints, and the repetitive strain injuries. The heavy manual labour, awkward postures, repetitive movements of legs, arms and back or previous existing injury can increase the risk of injury (Executive, 2016).

Electric shock

The electric shock and electrocution will cause the electricity hazards in the workplace. The shocked, getting zapped, fire from faulty, electrical equipment are the common causes of injuries or accidents that often can be serious or even fatal (Mittman, 2016). For those who are deal with electricity on daily basis are also has the higher risk for this kind of injuries. The hazard of electric shocks can also lead to other types of injury such as cause fall from ladders or scaffolds (Executive, 2016).

Chemical and fires

The explosions, burns and serious injuries related to workplace hazards can lead the fatal. For prevention fires in workplace, the employers should carry out a fire safety risk assessment keep it up to date in a certain period (Mittman, 2016). The employer also need to set up the fire extinguish in workplace and provide the training program for worker to prevent workplace hazards (Executive, 2016).

Slips and falls

Slips and falls at workplace are due to the wet or damaged or debris on the floor. This can cause the head and back injuries and also broken bones (Mittman, 2016). Fall can divide as same level falls and fall from a height. The most common fall is the same level falls which is the falls on relatively level surfaces that are caused by a disruption of normal and expected walking gait that can results in a sudden loss of balance. On the other hand, falls from height can cause broken bones, internal injuries, permanent disability, and even death at work (Cax, 2015).

RESEARCH METHODOLOGY

The methodology is important to gain efficiency data and also can gain many knowledge and information to further of the research study. In general, there are two types of research methods which are qualitative and quantitative approaches (De Vaus, 2013). In this research, the researcher will do the research at Ong Chuan Hin Rice Mill Sdn Bhd. The method used on this research is qualitative method. The interview and the literature review are the source of evidence was be used to collect data. According to Brikci (2007), qualitative method is related to understanding some aspects of the social life. And in general, the methods will generate words rather than the number of data for analysis. Qualitative data are analyzed about what the data explain about personal's experiences, opinions and meaning (Baum, 2002).

Data collection method (qualitative method)

Primary data

Primary data can be defined data observed or collected directly from firsthand evidence of historical events (Inc, 2016). Generally, the information is obtained from face to face consultation. The data need to collect with use the face to face method because can get more clear and specific information (Brikci, 2007). The primary data for this research was obtained from an interview with the managing director from OCHRM Sdn Bhd. Researcher has conducted an interview as primary resources for this study. An interview is a simple way for us to collect first hand data from third party. Normally, interview means a personal meeting between people when questions are asked and answered (Businesscom, 2015). A successful interview can provide useful information to the researcher to complete the study (Crow, 2013).

To getting the data from the company with successful, researcher had prepare a set of questions for interview. All the questions will be asking during the interview.

Interview questions

1. Aspect demography
 - a. May I know what your full name and age?
 - b. What is your position in that particular department?
 - c. How long you have been with this company?
2. Aspect Safety and Health Practices (Chen-Shan Kao, 2008)
 - a. Does your company provide the Safety and Health Practices in workplace?
 - b. May I know what kind of Safety and Health Practices apply in workplace?
3. Aspect benefit of Occupational Safety and Health Practices (Zainudin, 2010)
 - a. Do you think that Occupational Safety and Health Practices have any benefit on your organization? What kind of benefit?
4. Aspect types of hazard in manufacturing industry? (Seixas, 2008)
 - a. What types of hazard happen in your workplace?
 - b. Did your company do something to reduce the hazardous work on-site?
5. Aspect types of injury/accident happen in workplace (Shekh, 2015)
 - a. What types of accident or injury that always happen in the workplace?

Secondary data

Secondary data is the information or data that have been collected, readily available and documented from other sources (MSG, 2016). In this study, most of the information or data is obtained from secondary data through literature review, books and electronic media such as websites of internet, articles, journals conference papers, and reports which is related to the research.

A literature review is an evaluation of a body of research that addresses a research question (Marc Johnson, 2012). The sources of information can be any information related to the topic of interest, provided that it is from relevant sources such as published books, journals, published paper, published government documents and other relevant sources. In order to prepare for the study, various sources of literature had been consulted to strengthen the study so that the outcome of the study can be of higher accuracy and reliability (Brikci, 2007). In this research, the researcher had studied several journal articles related to the research subject and made some reviews on it. The data collected were help the researcher to better understand about the topic.

DATA ANALYSIS AND FINDING

The researcher was analyzed the data that had been collected from the interview at the manufacturing industry, Ong Chuan Hin Rice Mill Sdn. Bhd. (OCHRM Sdn Bhd) which is located at Jitra, Kedah Darul Aman. The interviewee Mr Ong Soon Thye is the Managing Director of this company. All the information and data was collected from the process of interview and observation, by asking a list of questions. During the interview session, the researcher focused on the question about Safety and Health Practices that used in company and also the questions about benefit of Occupational Safety and Health Practices and type of hazard and accident that happen in this

company. The data collected are then analyzed so that they can become useful information to the employers and employees who in the manufacturing industry.

Occupational safety and health practices applied in manufacturing industry

According to managing director of OCHRM Sdn Bhd. the company was provided the safety and health practices in workplace. Below are types of safety and health practices applied in OCHRM Sdn Bhd.

Health and safety programs

OCHRM Sdn Bhd provided the safety programs such as training about the machinery, PPE and also training for the accident and emergency response. Health and safety programs have the positive effects for the worker morale and productivity. The safety programs need to be documented. Employers must prepare an overall safety program to teach their worker the knowledge of safety and health and how to handle the risks (Othman, 2012).

Personal protective equipment (PPE)

OCHRM Sdn Bhd provided the PPE for the worker such as safety helmets, gloves, goggles and mask. PPE is the equipment that can protect the user against the risk of injury at work. PPE is important because it enables the workplace to be safety include the procedures, instructions and guidance to encourage people to work safely (De Vaus, 2013).

Maintenance standards and procedures

According to director of OCHRM Sdn Bhd, all the tools, machinery, equipment or material used by employees must be maintain according to the manufacturer's recommendations. Besides that, supervisors are responsible for monitor the items to measure the item have been used properly by the employees and are maintained and remain in good working condition. The company was makes the maintenance for the machinery every months. Employees must know how to properly clean, maintain, recognize and operate the equipment and machinery (Ibrahim, 2015).

Workplace environment

According to director of OCHRM Sdn Bhd, a safety and healthy workplace is an injury and illness free workplace. Employees will be motivated and work productively when they are working in comfortable and ergonomic office design. The company also set up the fire extinguishers and the safety notice board in the environment of the workplace. Workplace environment includes the surrounding environment in organization which can be controlled and coordinated, and also the communication between all employees in the organization (Sahiri, 2015).

Benefit of occupational safety and health practices (OSHP)

Director of OCHRM Sdn Bhd mentioned that, applying the OSHP in the company can helps to improve staff morale, reduce staff turnover and reduce absenteeism. It is indirectly maximizes the performance, productivity and production rate in the company because the accident rate is reduced when applied the safety program and practices. Besides that, when the accident rate reduced the business cost such as health care and insurance cost also reduced, the company do not have to spend a lot of money on the compensation to the workers. It is directly increased the organizational performance.

Moreover, when the organization performance increased, company had a bigger chance to winning the contracts (Federation, 2016).

Types of hazard in the manufacturing industry

According to OCHRM Sdn Bhd, the types of hazard in the company as below:

Airborne hazard

Director of OCHRM Sdn Bhd said that, the rice grain dust is the major cause of the airborne hazard. The rice grain dust particle will cause the eye pain, eye irritation, skin allergies, and affect the respiratory system on the worker. Hence the company provide the PPE such as goggles, spectacle, glove and mask for the worker. In addition, the company also installed the filter bag as a ventilation system to reduce the rice grain dust particle in the workplace.

Noise

According to OCHRM Sdn Bhd, the sound-pressure level (SPL) in the rice mill varied from 78 to 92 dBA. The machinery is the noise sources in the rice mill (Kumar, 2008). The noise can cause the ear damage (Lindahl, 2008). The company provide the PPE such as ear muff for the worker to prevent this type of hazard.

Types of injury/accident happen in the workplace

According to OCHRM Sdn Bhd, the accident/injury happens in workplace as below:

Slips Director of OCHRM Sdn Bhd said the cause of slips is the dry floor with the rice grain dust in the company. The company had clean the flooring as routine to prevent worker slips in the workplace.

Accidental of falling objects

The objects are stored at or above head level will cause injury caused by falling objects (Doucette, 2016). OCHRM Sdn Bhd had provides the safety helmet for the worker to prevent this type of injury.

Trips

Trip happen when foot collides such as hits or strikes an object causing the worker lose the balance. The causes of trip may be the poor lighting, obstructed view, uncovered cables and the uneven walking surfaces such as steps and thresholds (Safety, 2016). The company had maintained the lighting in the workplace and set up the notice board to caution the employee to prevent trips.

DISCUSSION AND CONCLUSION

Review summary

This study is to identify the Occupational Safety and Health Practices in manufacturing industry. The objective of this study was achieved through interview with the managing director of OCHRM Sdn Bhd. to share their experiences and through the study of literature. Among the objectives of the study is to identify the Safety and Health Practices that was applied in manufacturing industry to prevent injury, identify the benefits of OSHP and to identify types of hazard, injury and accident happen in the workplace.

Recommendations

Managers can use the OSHP on the literature reviews and data analysis in this study to improve their safety management and performance in the organization. The improvement of the safety performance is not only can reduce the accidents, cost and productivity but also and create a good image for the company. In addition, management should increase the frequency of the safety training program to ensure the employees are aware of the safety rules. Moreover, the employers should tighten the control over for the employee to wearing the PPE in the workplace and give the warnings or even penalties for the worker who was not wearing the PPE. Besides that, the management also can improve the workplace ergonomic which is design the workplace to make it fits to the worker to provide them a comfortable working environment, it can maximum the productivity and reduced the hazard in the workplace. Furthermore, the company can use the more advanced technology such as filtration system to reduce the airborne hazard and also use the noise cancellation technology machines to replace the current machines to reduce the noise hazard.

Conclusion

Based on interview, the most important of Safety and Health Practices is the health and safety program which include the safety training for the worker to prevent the injury and accident in the workplace. The benefit of OSHP is to maximize the organization performance which increased the productivity because the accident had been prevented. The most common hazard in the interviewed industry is airborne hazard and the most common injury or accident is slips and trips. By applying the Occupational Safety and Health Practices, the accident and injury happen in the workplace will relatively reduce. In conclusion, there is not much research has been conducted regarding the Occupational Safety and Health Practices (OSHP). Therefore, this study was to identify the practices which can apply in the manufacturing industry. Through the interviews that have been conducted, we can identify more closely related types of Safety and Health Practices, benefit of Occupational Safety and Health, types of hazard and injury or accident will happen in the manufacturing industry.

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