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BARRIERS FACED BY THE WORKERS TO PRACTICE HEALTH AND SAFETY AT CONSTRUCTION SITES

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ABSTRACT

Construction industry is one of the industries that gives huge contribution to the economic sectors. It has contributing significantly to the country's economic and infrastructure growth. but all the activities in this industry had led to frequent accidents, resulting in injuries among the workers at the construction site. This research will help to explore the barriers of workers to practice health and safety at construction site. The aim for this research is to identify the barriers faced by the workers in practicing health and safety at construction projects to ensure that incidents at construction site can be reduced. For this research, an online questionnaire was utilized via Google Form to collect data from participants. A total of 161 questionnaires were distributed to G7 contractor companies located in Klang, Selangor. The gathered data was then analyzed using SPSS software version 29. Trough the findings it shown that heat stress is the main barriers for the workers to practice health and safety at contruction site. All parties from all sides and levels must working together to find the solutions. Implementing various strategies such as offering incentives, raising awareness about Personal Protective Equipment (PPE), organizing additional health and safety programs, and providing language training classes can effectively address the barriers to health and safety practices at construction sites. This finding will all related parties to overcome the barriers of health and safety at construction sites.

Keywords: *barriers, workers, health and safety, constrcution sites*

INTRODUCTION

The construction industry is one of the industries that greatly contribute to the economic sectors. It contributes significantly to the country's economic and infrastructure growth (Emmanuel et al., 2020). But all activities in this industry have led to frequent accidents and injuries among the workers at the construction site. Despite its contributions to accelerating development, its activities have been linked to a high rate of accidents and fatalities compared to other industries (Chen et al., 2020). This industry has held a long record of poor health and safety performance. This poor health and safety are due to its complex site environment with various operations, usually performed by temporary organisations, indirectly resulting in frequent worker injuries (Chen et al., 2020). In addition, this scenario has made the construction industry one of the most dangerous industries to involve in a long time, especially in a developing country. Although the safety level has been increased by the parties involved, accidents and injury cases still arise over the years. The technical weaknesses of the design, such as poor use of codes and judgement due to lack of experience, were reduced by adding new requirements in response to the accidents that occurred. But the accidents continued to occur, and this shows that the root causes of the accidents are because of the workers' irresponsibility (Alhajeri, M.2011). The health and safety issues will improve if the workers are more concerned about their safety at the site. The impact of the accidents and injuries has led to project delays, increased operating costs, and works that need to be stopped temporarily (Emmanuel et al., 2020).

The Department of Occupational Safety and Health Malaysia (DOSH) is a government agency established in 1914. At that time, this agency did not focus on all industries comprehensively. DOSH is a new title given before the agency's previous name was industrial safety and hygiene. DOSH is improved earlier policies that focus more on the safety, health and welfare of workers who should be protected and cared for. DOSH also plays a role in protecting workers from health and safety hazards that arise during work. DOSH has carried out various efforts to ensure the safety and health of workers while performing their duties, especially in the construction industry. One of the alternatives is introducing the National Blue Ocean Strategies in 2011 (NBOS), which helps increase worker safety and health and reduce the accident rate. The other alternatives also include the establishment of an occupational safety and health master plan (OSH-MP), which was launched by Dato Seri Najib Tun Razak in 2011. This occupational safety and health master plan was established to create a safe work culture between workers and employers and to promote a safe workplace (Pengenal et al., n.d.). Although various efforts have been made to control the number of accidents at the workplace, especially at construction sites, the steps have not worked as expected. This is because accidents, especially at construction sites, are still high compared to other industries. Between January 2022 and November 2022, as many as 6719 cases at the construction site were reported, with 6306 cases of injuries that did not involve permanent loss of ability, 227 cases were injuries that involved permanent loss of ability, and 186 deaths recorded.

This clearly shows that other causes contribute to accidents at construction sites, which is reinforced by the government's sustainable efforts to ensure that accidents at construction sites can be reduced. In lines with this aim, one research were established: to identify the barriers faced by the workers to practice health and safety at construction sites.

LITERATURE REVIEW

Health and safety are essential things that must be applied in the work environment and not only in the construction industry. However, the world is more concerned about health and safety in the construction industry because it is always the major construction problem (Alhajeri, M, 2011). Construction is also considered one of the most dangerous works in the world; because of that, the proper health and safety regulations at the site are priorities. The situation is worsening because some countries, significantly underdeveloped countries, do not practice the actual health and safety regulations (Alhajeri M, 2011). The poor safety and health conditions put the workers, especially the labour, in an unsafe environment. According to Kumar Brahmachary et al. (2018), because of the poor implementing of health and safety at construction sites, many accidents are found to be death, loss of workforce and health and become a disability. When developed countries have shown their commitment to reducing fatal accidents at site construction, the opposite thing happens in undeveloped countries (Kheni et al. 2008). In 1994, new legislation in Occupational Safety and Health in Malaysia was enacted, and as wellas goes to Occupational Safety and Health Act (OSHA) got approval from the parliament.

Workers' skills and performance during construction will define the project performance, and their skills and abilities might influence the projects to a greater or lesser level (Hussain et al., 2020). Since the workers are the construction industry's primary resources, their skills will determine the project execution, either success or failure. This means having productive and skilled workers is essential to the construction industry's growth and performance (Chang-Richards et al., 2017). According to Hussain (2020), expert workforce performance is directly related to the success of building projects and has long been regarded as a critical element in ensuring projects function efficient During 1970, when the construction industry in Malaysia is booming, the governmentneed to exploit foreign workers to work in the construction sector, which makes health and safety at site construction challenging to implement due to some factors such as language barriers, attitude or maybe due to the previous experience of the workers. Occupational health and safety can be divided into low-hazard organization and high-hazard manufacturing (Hughes Phil & Ferrett Ed, 2007).

Previous research has proven that not wearing proper PPE during work can be the main factor in accidents at site construction. This statement was supported by Al-Khaburi and Amoundi (2018), which exposed the cause of accidents at construction sites due to non-compliance with the use, especially in developing countries where safety is not their priority because of the environment and culture at that state. Although PPE is provided, the workers are reluctant or neglect to wear it (Lin & Mills, 2001). Workers avoid wearing PPE because it cannot be used in specific jobs (Sehsah et al., 2020). This means different work requires different PPE because it is specialized. The worker also believes that wearing PPE will cause them more problems than if they do not wear it, and due to that belief, they refuse to wear the PPE. Hence, the workers disregard safety program guidelines contributing significantly to workplace accidents and fatalities (Chen et al., n.d.). If the workers are provided with knowledge about safety and health, including part of hazards, it will lead to the lowest fatalities and injuries at construction sites. Additionally, accidents at construction sites can be avoided by analyzing the variables that cause them in advance through a safety program (Øien et al., 2011). Without adequate training programs, employees might not be familiar with equipment usage, safety procedures, or emergency response procedures.

Cost is the main element involved in the construction industry from before construction until the end of construction. Usually, in construction projects, especially for small companies, they tend not to hire safety people charge at site construction because of the high cost (Yusof & Misnan, 2019). PPE is associated with additional project expenditure because it is so

expensive (Kelloway & Cooper, 2011). This also includes the larger companies that only provide essential safety equipment such as safety helmets, safety boots, and safety jackets. All things related to improving safety and health will require much cost. Some works at the site required special PPE, such as works that involved chemicals which means extra costs needed for that PPE. PPE is expensive, safety training is expensive, and some companies lack funding to provide training for their personnel (Yusof & Misnan, 2019). Lack of safety knowledge will significantly increase the occupational risk, meaning the client must pay out more. This substantial payment was made to cover employee compensation and medical expenses related to the injuries (Haupt & Pillay, 2016).

Next is language barrier problems. We know that in Malaysian construction sites, most workers are foreign, creating a communication gap. Aljaheri (2014) stated that people with different backgrounds or nationalities would express and understand others differently. This means miscommunication between the workers and management side can lead to health and safety problems. Some of the workers can speak English with their understanding, but most of them cannot speak English at all, which is difficult for them to be trained and explain health and safety at the site. Since most of the foreign workers are from undeveloped countries such as Indonesia, Nepal, Myanmar, etc., they are unable to interact with their management in the local language or at least English which might cause their job to be delayed and put at risk (Valitherm et al., 2014). If the communication process is unsuccessful, many issues may arise during the project period that would limit any information, especially about safety and health information.

In the construction industry, time is very important, and it's crucial to make sure that all the work on a project is done according to the planned schedule. If the project gets delayed, it puts extra pressure on the workers to complete it quickly, which can be harmful to their health. Commonly, industries prioritize project completion over safety at the site (Lazarevic and Perry, 2004). The pressure in time to the workers becomes worse due to incomplete and incorrect planning, construction being halted because of the weather, and inaccurate delivery dates and times (Conchie et al., 2013). In construction, the workers' payment is based on how much they complete the work, not how long they spend at site construction.

Construction jobs are notorious for being tiring, with tight deadlines and stressful working conditions. About 70% of construction professionals and workers experience workplace stress in the form of anxiety, depression, low motivation, and morale as a result of the complicated nature of the industry (Campbell, 2006). As a result, professionals and even workers in this sector operate in a highly competitive environment where projects are designed, built, and delivered within tight budgets and deadlines. This makes construction work mentally and emotionally demanding and stressful (Ibem et al., n.d.). Work-related stress can be defined as harmful physical and emotional responses that occur when the job demands do not match the worker’s abilities, resources, or needs (NIOSH, 1999). It has been shown that workers in different occupations negatively impact stress on their productivity and job satisfaction (Haq et al., 2008). Furthermore, according to recent research, stress levels among construction workers were substantially higher than at home, severely impacting their health and productivity (Halkos & Bousinakis, 2010). When they lose focus due to work pressure, they can no longer focus on their safety. Stress at work can affect not only the physical but also the mental health of workers, where mental health is a determining factor in suicide on construction sites. Thus, State (1994) found that construction work is the third most stressful occupation after mining and police work. Due to the nature of the construction industry's manufacturing processes, it is responsible for making the construction work hazardous and stressful (Liang et al., 2022)

RESEARCH METHODOLOGY

This studys employs a quantitative methodology with the utilization of the Simple Random Sampling technique for the sampling process. Using this approach, every individual has an equal chance of being selected in the sample form of population (Acharya et al., 2013). It is based on the presumption that the participants possess the required characteristic to achieve the study's aims. Data is choosen using random number table or computer generated list of random numbers. Furthermore, Simple Random Sampling require basic knowledge about the population while maintaining strong internal and external validity which the data analysis becomes more straightforward (Sharma, 2017). This nonprobability sampling methodology works incredibly well when researching a specific cultural topic with trained experts consisting of G7 from Klang. This method focuses solely on the research scope. The sampling size will be conducted using the Raosoft website to obtain the survey's sample size. According to CIDB Malaysia, the population of contractors in the Klang district is around 274. The sample size was calculated using a Raosoft sample size calculator with a margin error of 5%, a confidence level of 95% and a 50% response distribution. As a result, the sample size for 274 population contractors in Klang is only 161. The data was collected from the respondents and will be analysed to conclude the findings. A sum of 161 sets of questionnaire surveys were sent to the intended company's contractor located in Klang using online method, specifically via Email. However, the number of received feedback responses amounted to 100 out of the initial 161 sets distributed to the respondents. It was essential to know that the research success or not. As a result, the data is analysed using the Statistical Package for the Social Sciences (SPSS) version 28. Then it will be analysed with SPSS to get the mean of the findings. To provide a better understanding and straightforward presentation, the data analysis is in form of table.

FINDINGS AND DISCUSSION

The questionnaire survey were distributed through email and out of from 161 , only 100 feedback of responses were received which contributes 65% from the respondent rate. According to Fincham (2008), researchers should aim for a survey response rate of about 60% in most research studies. This means that if we can achieve this response rate, the data collected for this study can be considered acceptable.

Table 1: Mean and Rank for Barries Faced by The Workers to Practice Health and Safety at Costrcution Site

Barriers Faced by The Workers to Practice Health and Safety at Construction Site	Mean	Rank
Heat stress can reduce worker's performance	4.73	1
Work stress can lead to accident during working	4.66	2
Lack of awareness about Personal Protective Equipment (PPE)	4.64	3
Lack of cost can give impact to implement health and safety regulations	4.64	4
Lack of awareness in safety and health can influence the worker's performance	4.63	5

Poor safety culture intends to non-commiment to best practice in construction proejct	4.62	6
Long working hours can increase worker chance of getting hurt	4.55	7
Languagge barriers consequently lead to safety matter at construction site	4.51	8
There are still many workers that did not attend safety training before starting their work	4.46	9

Note: Below 1.00 – 1.50 = Strongly Disagree (SD), 1.50 – 2.50 = Disagree (D), 2.50 – 3.50 = Undecided (UD), 3.50 – 4.50 = Agree (A), 4.50 – 5.00 = Strongly Agree (SA)

Table 1 show the mean and rank for barriers faced by the workers to practice health and safety at construction site. Based on the table 4.19, range for the barriers is between 4.46 to 4.73 which can be categorized as very high. Heat stress can reduce worker's productivity is ranked number one with the highest mean value which is 4.73 and followed by work stress which can lead to accident during working in rank number 2 with the second highest mean value of 4.66. But, lack of awareness about PPE and lack of cost can impact implementing health and safety regulations had the same mean value which is 4.64 and both in rank number three and four. Then, a lack of awareness in safety and health can influence the worker's performance at the fifth rank with mean value of 4.63 and poor safety culture intends to non-commitment to best practice in construction project stay at rank number six with mean value of 4.62. Next, the mean value for long working hours can increase worker chance of getting hurt is 4.55 at rank of number seven. Language barrier consequently led to safety matter a construction site has mean value of 4.51 at the rank of 8 and there are still many workers did not attend safety training before starting their work is at the lowest bottom at rank of number 9 with mean value of 4.46.

Previous studies also agreed that heat stress will give effect to mental performance in term of reaction, clear thinking, focus and etc (Acharya et al., 2018). It can also lead to lower physical stamina, less mental awareness and different behaviour (Varghese et al., 2018). It should be noted that previous research has also shown that work-related stress can be detrimental to workers' physical and mental health and is related to factors such as physical health, organizational structure, interpersonal conflicts, personal characteristic, and the nature of the job (Ng et al., 2005). However, Haslam et. Al (2005) stated that long work days make workers more fatigued, which impairs their ability to focus and make decisions and increase their chance of getting hurt. Additonally, previous research has proven that not wearing proper PPE during work can be the main factor in accidents at site construction which become the main barriers for workers to practice health and safety. This statement was supported by Al-Khaburi and Amoundi (2018), which exposed the cause of accidents at construction sites due to non-compliance with the use, especially in developing countries where safety is not their priority because of the environment and culture at that state.

All parties at every level need to fulfill their roles in addressing the obstacles that workers face in practicing health and safety at construction sites. It is essential to ensure that workers feel safe while working. Effective planning is necessary to overcome these barriers and enable workers to fully commit to their work without concerns about their safety.

CONCLUSION

The objective of this research has been achieved by ranking the means for each of the barrier variables. In summary, the barriers faced by workers in practicing health and safety at construction sites include heat stress, work stress, and lack of awareness about Personal Protective Equipment (PPE). The analysis of this research indicates that heat stress at construction sites is the main barrier identified by the respondents. Heat stress has a strong correlation with workplace accidents. When workers are exposed to excessively high temperatures, their comfort is reduced, which can increase the risk of serious accidents. Proper health and safety programme and raising awareness are essential to educate workers regarding the indications of heat-related illnesses and their prevention. Familiarity with heat stress empowers employees to identify symptoms within themselves and their colleagues. Consequently, it becomes challenging for workers in hot weather conditions to fully prioritize their health and safety. However, through adequate training, workers can become better prepared to handle real-life situations effectively.

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