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Workplace safety is important in healthcare sector as people’s lives are at risk if safety is ignored or neglected. Nurses interact daily with patients and the general public hence safety behaviour amongst nurses is pertinent. To what extent perceived workplace safety practices influence such behaviour is the main aim of the study. A survey among 278 nurses working in public hospitals in Malaysia was carried out to meet this objective. Using multiple regression analysis, the present study further observed that nurses’ perceived compliance with safety behaviour was significantly and positively influenced by perceived practices in co-worker safety, supervisor safety, and satisfaction with safety practices. The research findings have important implications for management of hospital on the need to enhance their workplace safety practices.

Track: Management

1. Introduction

Workplace safety is an important issue that concerns organizations as occupational injuries and accidents at work are costly. Not only organizations have to suffer from lost productivity, they also have to pay compensation for injuries or deaths occurred. Workers who are injured due to occupational accidents may also suffer psychologically and emotionally (Jovanović, Aranđelović and Jovanović 2004). Due to the consequences of occupational accidents and injuries, workplace safety is a serious concern that warrants appropriate actions and measures. As Malaysia is on its way to achieve its developed nation status by 2020, occupational injuries and accidents that may cripple its human capital deserve special attention.

According to a report by Social Security Organization (SOCSO 2008), since 2004 until 2008, there was an increase in the number of fatal accidents in Malaysia from 1,291 to 1,301 even though the number of accidents within the same period decreased from 77,742 to 59,095. These figures suggest that accident occurrences will lead to a distasteful consequence, especially if it involves loss of lives, not to mention the monetary compensation that has to go in tandem with such incidents.

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The Social Security Organization (SOCSO) of Malaysia further reported an increase in compensation paid out to due industrial accidents from RM812.43 in 2004 to approximately RM1187.12 million in 2008, an increase of 46%, suggesting that an increasing trend in pay out may be likely if no serious action is taken by the relevant parties to reduce industrial accidents at work.

Whilst various factors can be attributed to occupational injuries and accidents, human errors have been cited to explain more than 80% of why occupational accidents and injuries took place at work (Goetsch 2005). Indeed, Clark (2006) reported that failures to adhere to rules and regulations, follow safety procedures conscientiously, and take precautions against hazards such as wearing personal protective equipment are commonplace in many industries, such as mining and transport. Even though many violations in these industries seemed to occur to make work more efficient, quicker, or more convenient, they raise a pertinent issue of why compliance with safety behaviour at work is not observed especially when occupational accidents are likely to be fatal or cause serious bodily injuries.

The present study intends to investigate the role of perceived workplace safety practices on perceived safety compliant behaviour amongst employees. Safety compliance refers to activities employees need to do in order to maintain workplace safety (Griffin and Neal 2000; Neal et al. 2000). Such behaviour includes maintaining the standard of work procedures and wearing personal protective equipment (Neal and Griffin 2006). It deals with the efforts employees exert to maintain workplace safety by following the organizational safety based procedures, rules, and regulations (Griffin and Neal 2000; Neal et al. 2000; Inness et al. 2010) i.e. by focusing on meeting the minimum work safety standards. In essence, safety compliance is a behaviour that is sanctioned and expected of employees (Jiang et al. 2010), and violations of safety standards and procedures often entail punishment while compliance with safety may be rewarded (Reason 1990). This also means that violations of safety standards and procedures tend to inflict more serious consequences to organizations both financially and non-financially.

Safety performance hinges considerably on workplace safety practices at work. Safety practices can be defined as the policies, strategies, procedures and activities implemented or followed by the management of an organization targeting safety of their employees (Vinodkumar and Bhasi 2010). In essence, safety practices are put in place to reduce occupational deaths, accidents and injuries. According to Hayes et al. (1998), workplace safety practices can be grouped into five categories, as follows:

1. Job safety – To what extent employees perceive that the job safe in the accomplishment of the job performance i.e. whether the job is perceived to be dangerous, risky, scary etc.
2. Co-worker safety – To what co-workers are perceived to practise safe work behaviour i.e. whether they follow safety rules or encourage others to follow safety procedures
3. Supervisor safety – To what extent supervisor is perceived to demonstrate safety-related behaviour at work i.e. whether he/she enforces safety rules, acts on safety suggestions etc.
4. Management safety – To what extent management is perceived to develop safety culture at work i.e. whether it rewards safe behaviour, provides safe working conditions etc.
5. Satisfaction with safety program – To what extent safety program conducted is perceived to satisfactory whether the safety program is perceived to be unclear, worthwhile, important etc.

The five different facets of workplace safety reflect the degree of workplace safety practices carried out in organizations. Hayes et al. (1998) further argued that employees could have different perceptions with regards to the different aspects of safety at work, which lead to safety behaviour at work. As safety practices encompass various safety dimensions, it is important to investigate the differential effects of each practice in encouraging employees to comply with safety behaviour at work. By doing so, not only can we enhance our understanding of the extent of safety practices can impact safety compliance behaviour, more effective measures can be implemented as organizations have scarce and limited resources. Hence, the present study is concerned with investigating the role of workplace safety practices, as measured by Hayes et al. (1998), in influencing employee compliance with safety behaviour while at work.

2. Literature Review

Due to the importance of workplace safety, it is not surprising that many empirical works have been devoted to this topic. At least two general streams of research can be identified: those that are interested in finding out the role of safety climate/practices in shaping safety performance/behaviour at work, and those that are keen to examine the factors that shape and influence safety climate or safety culture. In addition to these streams, some researchers seek to assess and evaluate the effectiveness of safety interventions or programs instituted. The present study is located within the first stream of research as it aims to look into the role of safety practices in influencing safety behaviour. By doing so, the present study adds to the existing safety literatures.

Many scholars have argued the role of safety climate and hence safety practices in enhancing safety performance at work. According to Clark (2006), safety climate provides guidance on suitable organizational behaviour in that a more positive climate encourages safe behaviours through organizational rewards e.g. recognition and feedback for making safety suggestions, while a more negative safety climate reinforces unsafe behaviours by removing incentives to improve safety e.g. prioritizing production over safety. Indeed, the theoretical proposition on the influence of safety climate on safety behaviour has received overwhelming empirical support across different organizational settings such as off-shore industry (e.g. Mearns et al. 2003; Hoivik et al. 2009), manufacturing (e.g. Cooper and Phillips 2004), construction (e.g. Siu et al. 2004; Larsson et al. 2008), and service sector (e.g. Cloutier et al. 1998; Sinclair et al. 2003). Similar results were also reported in healthcare settings (e.g. Rogers et al. 2004; Scott et al. 2006; Singer et al. 2009). In a meta-analytic study involving 32 scientific inquiries, Clark (2006) found support for the link between organizational safety climate and employee safety performance.

Previous studies also seem to provide overwhelming evidence on the role of safety climate on safety compliance behaviour. For example, Griffin and Neal (2000) conducted a study to examine the relationship between safety climate and safety performance safety compliance and safety participation among 326 employees in
three Australian manufacturing organizations. They observed that safety climate affected positively safety compliance and safety participation. Similar result was also obtained by Neal et al. (2000) in which they found that safety climate had an effect on safety compliance and safety participation. Pedersen and Kines (2011) also reported similar finding in their study on safety motivation and safety performance safety compliance and safety participation among 532 workers of 22 small, medium, and large metal or wood manufacturing enterprises in Denmark. In a related study, Vinodkumar and Bhasi (2010) found safety compliance and safety participation to have a positive significant relationship with safety knowledge and safety motivation. Clarke (2006) conducted a study to examine relationships between safety climate and safety performance participation and compliance using occupational accidents and injuries as moderators. The results supported the hypotheses linking safety climate to employee safety compliance and participation, with the latter demonstrating a stronger relationship.

Safety climate in the healthcare setting has also been found to enhance safety behaviour. Within the context of this setting, patient safety is given paramount importance as they are the contact customers healthcare workers have to interact with almost on a daily basis. In their survey among 91 hospitals in the United States, Singer et al. 2009 found that hospitals with better safety climate overall had lower relative incidence of Patient Safety Indicators (PSIs), as did hospitals with better scores on safety climate dimensions. They also observed that frontline personnel’s perceptions of better safety climate predicted lower risk of experiencing PSIs. In a recent study by Agnew et al. (2013) in acute hospitals in Scotland, they found that hospital safety climate scores were significantly correlated with clinical workers’ safety behaviour and patient and worker injury measures, although the effect sizes were smaller for the latter. They also revealed that perceptions of staffing levels and managerial commitment were significant predictors for all the safety outcome measures. Both patient-specific and more generic safety climate items were found to have significant impacts on safety outcome measures. Hansen, Williams and Singer (2011) found a significant positive association between lower safety climate and higher readmission rates for acute myocardial infarction (AMI), and heart failure (HF). Similar findings that hospital safety climate reduces injuries and enhances safety performance were also reported elsewhere (e.g. Katz-Navon et al. 2005; Hofmann and Mark 2006; Chowdhury and Endres 2010).

In an earlier study, Gershon et al. (1995) aimed to assess self-reported levels of compliance amongst 1716 hospital-based healthcare workers in the United States. Overall compliance was defined as "always" or "often" adhering to the desired protective behaviour, and 11 different items composed the overall compliance scale. Compliance rates varied among the 11 items from extremely high for certain activities e.g., glove use, and disposal of sharps to low for others e.g., wearing protective outer clothing, and wearing eye protection. They found that compliance was strongly correlated with several key factors: (1) perceived organizational commitment to safety; (2) perceived conflict of interest between workers’ need to protect themselves and their need to provide medical care to patients; (3) risk-taking personality; (4) perception of risk; (5) knowledge regarding routes of HIV transmission; and (6) training in universal precautions. Compliance rates were associated with some demographic characteristics: female workers higher overall compliance scores than
did male workers, and overall compliance scores were highest for nurses, intermediate for technicians, and lowest for physicians.

Based on the above arguments, it is possible to hypothesize in general that perceived workplace safety practices significantly influence perceived safety compliant behaviour amongst employees at work. Specifically, in terms of each dimension of safety practices, the following hypotheses are offered:

H1: Perceived job safety influences positively perceived compliance with safety behaviour of employees at work.

H2: Perceived co-worker safety practices influence positively perceived compliance with safety behaviour of employees at work.

H3: Perceived supervisor safety practices influence positively perceived compliance with safety behaviour of employees at work.

H4: Perceived management safety practices influence positively perceived compliance with safety behaviour of employees at work.

H5: Perceived satisfaction with safety programmes influences positively perceived compliance with safety behaviour of employees at work.

3. Methodology

To meet the desired research objective, the present study considered the healthcare setting in Malaysia. This research setting was particularly chosen because in this industry injuries among healthcare workers are a common phenomenon (Boden et al. 2012). Furthermore, this industry also determines the health and well-being of a nation, an important ingredient for a country’s social development and growth. Within this research setting, a focus was particularly given to nurses because they are the backbone of the healthcare industry and they are the ones who deal first hand with patients (Ida et al. 2009). Furthermore, studies indicate that nurses are prone to occupational injuries and accidents due to their nature of job. For instance, Nsubuga and Jaakkola (2005) found that 57% of the nurses and midwives in the sub-Saharan Africa in their study had experienced at least one needle stick injury in the last year. Various factors have been cited to affect injuries in this sector. Scott et al. 2006 found that among the sampled critical care nurses in the United States, the majority consistently worked longer than scheduled and for extended periods. They further revealed that longer work duration increased the risk of errors and near errors and decreased nurses’ vigilance. Similar findings were reported by Rogers et al. (2004). Based on the logbooks completed by 393 hospital staff nurses, they revealed that participants usually worked longer than scheduled and that approximately 40% of the 5,317 work shifts they logged exceeded twelve hours. The risks of making an error were significantly increased when work shifts were longer than twelve hours, when nurses worked overtime, or when they worked more than forty hours per week.

To collect the required data, self-reported questionnaires were administered to nurses employed by the Ministry of Health Malaysia in four major hospitals in the northern states of Peninsular Malaysia. The selected nurses were directly involved in nursing patients in the ward and not involved in administrative tasks. This group of nurses was particularly chosen because they are directly exposed to workplace hazards at a medical setting. Four hundred questionnaires were distributed via the
assistance of the Matrons of the respective hospitals. However, a total of 278 were usable for analysis purposes.

The average age of the respondents was 31.94 while the average tenure with the hospitals was 7.91 years. Majority of participants 90.6% who completed the survey were Malays and 95.3% were women. The demographic information for the respondents in our sample was consistent with the population demographics.

4. Measurement

4.1 Perceived Workplace Safety Practices

Workplace safety practices were measured using the 50-items from the Workplace Safety Scales (Hayes et al. 1998). Hayes et al. (1998) defined perceived workplace safety practices as perceived safety practices being practiced at workplace. The perceived workplace safety practices consist of five dimensions namely job safety, co-worker safety, supervisor safety, management safety, and satisfaction with safety practices. Each dimension was measured by 10 items, on which participants were asked to rate on a five-point Likert scale, ranging from ‘1’ “Strongly disagree” to ‘5’ “Strongly agree.” Some examples of items asked were, “In my job there is chance of death”, “My co-worker encourages others to be safe”, “My supervisor updates safety rules”, “My management investigates safety problems quickly”, and “The safety program at work is worthwhile”.

4.2 Compliance with Safety Behaviour

A total of 11-items were measured on a five-point response format from ‘1’ “Never” to ‘5’ “Always.” The reported reliability of this instrument was .89 (Hayes et al. 1998). Similar to perceived workplace safety practices, the items for perceived compliance with safety behaviour was also adapted from Hayes et al. (1998). Some examples of items asked were, “I follow all safety procedures regardless of the situation I am in”, “I wear safety equipment required by practice”, and “I keep my work area clean”. The main reason adapting this measure because it has been widely used in examining perceived compliance with safety behaviour in previous attempts (e.g. Gyekye 2005, 2006; Gyekye and Salminen 2007, 2009).

4.3 Demographic Characteristics

Gender, marital status, education level, race, age, and work experience with the Ministry of Health were also solicited to know their demographic background. In addition, the participants were also asked whether they were happy with their current job and whether they would leave their job in five years time. These two questions were asked to gauge their satisfaction level with their job.
5. Results

5.1 Factor Analysis

To validate the WSS scale used, principal component analysis with varimax rotation was conducted to assess the underlying structure of the 50 perceived workplace safety practices items. Five factors were extracted with factors eigenvalue of more than 1 and were indexed to measure the five perceived workplace safety practices. The rotation revealed that satisfaction with safety program accounted for 32.28% of the variance, job safety for 15.04%, management safety for 7.21%, co-worker safety for 6.98%, and supervisor safety for 6.23%.

Similar to the perceived workplace safety practices, a principal component analysis with varimax rotation was conducted to assess the underlying structure of the 11 items of self-reported perceived compliance with safety behaviour. The factor analysis revealed that the variance of safety performance was explained by 66.57% with extracted factors eigenvalue of more than 1. Similar to the adapted measure, the factor construct was found to be unidimensional.

Table 1 contains the means, internal reliability value (Cronbach’s α), and the correlations of the variables under investigation. As shown in Table 1, all workplace safety practices except for supervisory safety were associated to some extent with safety performance. Safety performance had a significant association with job safety (r = .26, p < .01), co-worker safety (r = .23, p < .01), management safety (r = .32, p < .01), and satisfaction with the safety program (r = .18, p < .01). The reliability value of the major constructs ranged between .86 and .95.

<table>
<thead>
<tr>
<th></th>
<th>J$</th>
<th>CWS</th>
<th>SS</th>
<th>MS</th>
<th>SSP</th>
<th>CSB</th>
<th>Mean</th>
<th>α</th>
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Note. JS = Job safety; CWS = Co-worker safety; SS = Supervisor safety; MS = Management safety; SSP = Satisfaction with safety program; CSB = Compliance with safety behaviour

5.2 Regression Analysis

As mentioned earlier five hypotheses were generated for this study. These hypotheses were tested using multiple regression analysis. Multiple regression analysis is used to determine what proportion of the variance in the dependent variable is explained by the independent variables when these variables are entered into the regression analysis (Cramer 2003). As shown in Table 2, the five perceived workplace safety practices managed to explain significantly 45.3% of the variance in perceived compliance with safety behaviour. Consistent with the hypotheses 2, 3, and 5, co-worker safety (β = .164, p < .01), supervisor safety (β = .183, p < .01), and
satisfaction with safety program ($\beta = .502, p < .01$) were positively related to perceived compliance with safety behaviour. There was no support, however, for hypotheses 1 and 4, as job safety and management safety were insignificantly related to perceived compliance with safety behaviour. Of the three dimensions of perceived safety practices that were found to significantly predict compliance with safety behaviour, satisfaction with safety program emerged as the strongest predictor, as indicated by the highest beta value. The result suggests the importance of having safety program that is satisfactory to employees in enhancing safety compliance at work.

<table>
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<th>Independent variables</th>
<th>Standardized beta</th>
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<td>Job safety</td>
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<tr>
<td>Co-worker safety</td>
<td>.164**</td>
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<tr>
<td>Supervisor safety</td>
<td>.183**</td>
</tr>
<tr>
<td>Management safety</td>
<td>-.253</td>
</tr>
<tr>
<td>Satisfaction with safety program</td>
<td>.502**</td>
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<td><strong>$F$</strong></td>
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<tr>
<td><strong>$R^2$</strong></td>
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<tr>
<td>Adjusted <strong>$R^2$</strong></td>
<td>.446</td>
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</table>

Note. Dependent variable: Compliance with safety behaviour

* $p < .05$, ** $p < .01$

### 6. Summary and Conclusions

This study supports the idea that workplace safety practices are associated with higher compliance with safety behaviour. In general, the findings are hence consistent with earlier findings (e.g. Griffin and Neal 2000; Singer et al. 2009; Agnew et al. 2013). In particular, the study found that the more co-workers and supervisors adhere to work safety practices the more the employees comply with safety behaviour. The result suggests the role co-workers and supervisors play in influencing employees to comply with safety behaviour at work, consistent with social learning theory that proposes that individuals imitate the behaviour of others. If they perceive that their colleagues and supervisors are able to avoid injuries and accidents at work by behaving safely in the performance of their work, the employees are likely to do the same as people are generally hedonistic in nature in that they seek pleasure and avoid pain. In short, it appears that fellow workmates and lower level management safety practices influence employee compliance with safety behaviour in a way that the job itself and higher level management safety practices do not. This finding has an implication particularly to training employees with regards to the importance of their role in shaping other people’s behaviour and attitude at work. Training programs therefore should emphasize on the collective need for safety behaviour as an individual accident may impact the overall effectiveness and well-being of the organization. Being vigilant and keeping watch on what other employees are doing while at work should be encouraged.

In addition to the role models of co-workers and supervisors, employees who are satisfied with safety program in the organization tend to comply with safety behaviour
at work. According to Vinodkumar and Bhasi (2010), such finding has high practical relevance given the cost associated with workplace accident. This finding has an important implication to the design of a good and sound safety program at work. Safety programs should be designed in such a way that it is clear, worthwhile and important for employees to enable them to see the benefit of adhering to safety work practices.

Despite the insightful findings, a number of issues are raised. What are the actual processes by which the co-worker and supervisor safety practices influence employee’s compliance with safety behaviour? Does satisfaction with safety programs, in some way, educate or force employees to comply with work safety? If so, what are the processes and mechanisms involved? Do co-workers and supervisors act as a role model who demonstrates how working safely should be performed to other employees? Does the act of co-workers and supervisors constitute a value transmission process that influences employee compliance with safety behaviour? Do all employees comply with safety behaviour when safety practices are in place? What processes moderate and mediate the differences, if any? Clearly, more research will be needed to better understand the influence processes that flow between workplace safety practices and employee’s compliance with safety behaviour.

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