Do Workplace Safety Practices Influence Safety Compliance Behavior? Evidence among Nurses in Malaysia

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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 behavior amongst nurses is pertinent. To what extent perceived workplace safety practices influence such behavior 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 behavior 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 to management of hospital on the need to enhance their workplace safety practices.

1. Introduction

In today's modern world, work complexity emerges from the need to cope with the impact of globalization, which has caused fast pace of changes and forced demand for a better quality of workforce and output produced. Implicit in this argument is that organizations need to be concerned about workplace safety as one of the ways in which their workforce can produce and offer services as demanded by the force of globalization. Countries like Malaysia are also not immune from such force. Hence, for Malaysia to be competitive in the world characterized by increasing uncertainty and fierce competition, safety at the workplace is not an issue that can be brushed aside, especially when new risks keep on materializing from a new technological development.

According to a report by Social Security Organization (SOCSO) (2008), since 2004 until 2008, there was an increase in the number of fatal accidents from 1291 to 1301 even though the number of accidents within the same period decreased from 77742 to 59095. These figures suggest that accident occurrences will lead to a distasteful consequence, especially if it involves loss of live, not to mention the monetary compensation that has to go in tandem with such incidents. In 2008, the Social Security Organization (SOCSO) of Malaysia calculated an amount of approximately RM1187.12 million paid due to industrial accidents from RM812.43 in 2004. The increasing trend in pay out might continue to escalate if no serious action is taken by the relevant parties. In addition to the monetary loss, companies also suffer from other costs as well. Workers who are injured due to

occupational accidents may also suffer psychologically and emotionally (Jovanović, Aranđelović, and Jovanović, 2004). Due to the consequential nature of occupational injuries and accidents, workplace safety is an increasing concern among organizations. Indeed, 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.

Whilst various factors can be attributed to occupational injuries and accidents, compliance with safety behaviour at work particularly stands out. This is because human errors have been cited to explain more than 80% of why occupational accidents and injuries take place at work (Goetsch). 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 seemed to occur to make work more efficient, quicker, or more convenient.

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, Griffin and Hart, 2000). Such behavior 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, Turner, Barling and Stride, 2010) i.e. 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 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 & 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.).

In essence, the five different facets of workplace safety reflect the degree of workplace safety practices carried out in organizations. Hayes and his colleagues 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 and his associates (1998), in influencing employee compliance with safety behavior 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 stream of research in that it aims to look into the role of safety practices in influencing safety behaviour, and whether safety behaviour/performance is different amongst employees of different age groups. By doing so, the present study adds to the existing safety literatures.

Many scholars have argued on 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, Whitaker, & Flin, 2003; Hoivik et al., 2009), manufacturing (e.g., Cooper & Phillips, 2004), construction (e.g., Siu, Phillips, & Leung, 2004; Larsson, Pousette, & Torner, 2008), and service sector (e.g., Cloutier, David, & Duguay, 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 behavior. Within the context of this setting, patient safety is given paramount importance as patients 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, Flin, and Mearns (2013) in acute hospitals in Scotland, they found that hospital safety climate scores were significantly correlated with clinical workers' safety behavior 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., Chowdhury & Endres, 2010; Hofmann & Mark, 2006; Katz-Navon, Naveh, & Stern, 2005).

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 behavior, 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 nursing context in Malaysia. This research setting was particularly chosen because within the healthcare setting, injuries among healthcare workers are a common phenomenon especially back and sharp injuries (Boden et al., 2012). 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 percent 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. One of the reasons for choosing this group of people was because they are recognized as one of them who 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

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) define 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".

The following are the operational definitions of each dimension, and its respective reported reliabilities:

a. Job safety was defined as the perceived safety of the job ($\alpha = .88$).

b. Co-worker safety reflected the perceived co-workers safety practices ($\alpha = .95$).

c. Supervisor safety reflected perceived supervisor's safety practices at work ($\alpha = .86$).

d. Management safety was defined as the perceived management's practices towards safety ($\alpha = .93$).

e. Satisfaction with safety program was defined as the perceived satisfaction with safety programs in the organization (α = .93).

Perceived Compliance with Safety Behaviour

Compliance with safety behaviour was defined as perceived compliance to safety behaviour being demonstrated by employees. 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). 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)

5. Data Analysis

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 behavior. 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.

6. The Findings

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 1, the five perceived workplace safety practices managed to explain significantly 46.3% of the variance in perceived compliance with safety behaviour. Consistent with the hypotheses 2, 3, and 5 co-worker safety (β=.164, $p<0.01$), supervisor safety (β=.183, $p<0.01$), and satisfaction with safety program (β=.502, $p<0.01$) was positively related to perceived compliance with safety behaviour. There was no support, however, for hypotheses 1 and 4 as job safety (β=.001,ns) and management safety (β=-.253,ns) was unrelated to perceived compliance with safety behaviour.

7. Summary and Conclusions

This study supports the idea that workplace safety practices are associated with higher compliance with safety behavior. The study found the more co-worker's and supervisor's adhere work safety practice the more the employee's compliance safety behaviour would be. Similarly the results also indicated that the more employees are satisfied with safety program in the organization the more the employee's compliance safety behaviour would be. According to Vinodkumar and Bhasi (2010) such findings has high practical relevance given the cost associated with workplace accident. Further, it seems important the application of social learning theory in occupational safety is justified as it would reduce negative outcomes as well as increasing positive outcomes. However, this study found, job safety and management safety did not have a similar impact. Therefore, it appears that their fellow workmates and lower level management safety practices influences employee compliance with safety behaviour in a way that the job itself and higher level management safety practices do not.

But, what are the actual processes by which the co-worker and supervisor safety practices influence employee's compliance with safety behavior? Do satisfaction with safety programs, in some way, educates or forces the employee's to comply safe work? If so,how? Do the co-workers and

supervisors act as a role model who demonstrates how safe work should be performed and is then imitated by the employees when they find themselves in similar situations? Does the act of co-workers and supervisors constitute a values transmission process that influences employee compliance with safety behavior? Clearly, more research will be needed to better understand the influence processes that flow between workplace safety practices and the employee's compliance with safety behaviour.

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References

Agnew C, Flin R and Mearns K 2013, Patient safety climate and worker safety behaviours in acute hospitals in Scotland, *Journal of Safety Research*, Vol. 45, No. 11, pp. 95-101.

Boden LI, Sembajwe G, Tveito TH, Hashimoto D, Hopcia K, Kenweed C, Stoddard A and Sorensen G 2012, Occupational injuries among nurses and aides in a hospital setting, *American Journal of Industrial Medicine*, Vol. 55, pp. 117-126.

Chowdhury SK and Endres ML 2010, The impact of client variability on nurses' occupational strain and injury: Cross-level moderation by safety climate, *Academy of Management Journal*, Vol. 53, No. 1, pp. 182-198.

Clark S 2006, The relationship between safety climate and safety performance: A meta-analytic review, *Journal of Occupational Health Psychology*, Vol. 11, No. 4, pp. 315-327.

Cloutier E, David H and Duguay P 1998, Accident indicators and profiles as a function of the age of female nurses and food services workers in the Quebec health and social services sector, *Safety Science*, Vol. 28, No. 2, pp. 111-125.

Cooper MD and Phillips RA 2004, Exploratory analysis of the safety climate and safety behavior relationship, *Journal of Safety Research*, Vol. 35, pp. 497-512.

Gershon RRM, Vlahov D, Felknow SA, Vesley D, Johnson PC, Delclos GL and Murphy LR 1995, Compliance with universal precautions among health care workers at three regional hospitals, *American Journal of Infection Control*, Vol. 23, No. 4, pp. 225-236.

Goetsch, D. L. (2005). *Occupational Safety and Health for Technologists, Engineers, and Managers* (5 ed.). NJ: Prentice Hall.

Griffin MA and Neal A 2000, Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge, and motivation, *Journal of Occupational Health Psychology*, Vol. 5, pp. 347-358.

Gyekye, S. A. (2005). Workers' Perceptions of Workplace Safety and Job Satisfaction. *International Journal of Occupational Safety and Ergonomics, 11*(3), 291-302.

Gyekye, S. A. (2006). Workers' Perceptions of Workplace Safety:

An African Perspective. *Workers' Perceptions of Workplace Safety: An African Perspective, 12*(1), 31-42.

Gyekye, S. A., & Salminen, S. (2007). Workplace safety perceptions and perceived organizational support: Do supportive perceptions influence safety perceptions? *International Journal of Occupational Safety and*

Ergonomics., 13, 189-200.

Gyekye, S. A., & Salminen, S. (2009). Educational status and organizational safety climate: Does educational attainment influence workers' perceptions of workplace safety? *Safety Science, 47*, 20-28

Hansen LO, Williams MV and Singer SJ 2011, Perceptions of hospital safety climate and incidence of readmission, *Health Services Research*, Vol. 46, No. 2, pp. 596-616.

Hayes BE, Perander J, Smecko T and Trask J 1998, Measuring perceptions of workplace safety: Development and validation of the Work Safety Scale, *Journal of Safety Research*, Vol. 29, No. 3, pp. 145-161.

Hofmann DA and Mark B 2006, An investigation of the relationship between safety climate and medication errors as well as other nurse and patient outcomes, *Personnel Psycholog*y, Vol. 59, pp. 847-869.

Hoivik D, Tharaldsen JE, Baste V and Moen BE 2009, What is more important for safety climate: The company belonging or the local working environment? – A study from the Norwegian offshore industry, *Safety Science*, Vol. 47, No. 10, pp. 1324-1331.

Inness M, Turner N, Barling J and Stride CB 2010, Transformational leadership and employee safety performance: A within-person, between-jobs design, *Journal of Occupational Health Psychology*, Vol. 15, No. 3, pp. 279-290.

Jiang L, Yu G, Li Y and Li F 2010, Perceived colleagues'' safety knowledge/behavior and safety performance: Safety climate as a moderator in a multilevel study, *Accident Analysis and Prevention*, Vol. 42, pp. 1468-1476.

Jovanović J, Aranđelović M, and Jovanović M, 2004, Multidisciplinar aspects of occupational accident and injuries. *Working and Living Environmental Protection*, Vol. 2, pp. 325-333.

Katz-Navon T, Naveh E and Stern Z 2005, Safety climate in health care organizations: A multidimensional approach, *Academy of Management Journal*, Vol. 48, No. 6, 1075-1089.

Larsson S, Pousette A and Torner PM 2008, Psychological climate and safety in the construction industry-mediated influence on safety behaviour, *Safety Science*, Vol. 46, pp. 405-412.

Mearns K, Whitaker SM and Flin R 2003, Safety climate, safety management practice and safety performance in offshore environments, *Safety Science*, Vol. 41, pp. 641-680.

Neal A and Griffin MA 2006, A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels, *Journal of Applied Psychology*, Vol. 91, No. 4, pp. 936-953.

Neal A, Griffin MA and Hart PM 2000, The impact of organizational climate on safety climate an individual behavior, *Safety Science*, Vol. 34, pp. 99-109.

Nsubuga FM and Jaakkola MS 2005, Needle stick injuries among nurses in sub-Saharan Africa, *Tropical Medicine and International Health*, Vol. 10, No. 8, pp. 773-781.

Pedersen LM and Kines P 2011, Why do workers work safely? Development of safety motivation questionnaire scales, *Safety Science Monitor*, Vol. 15, No. 1, pp. 1-10.

Rogers AE, Hwang W-T, Scott LD, Aiken LH and Dinges DF 2004, The working hours of hospital staff nurses and patient safety, *Health Affairs*, Vol. 23, No. 4, pp. 202-212.

Scott LD, Rogers AE, Hwang W-T and Zhang Y 2006, Effects of critical care nurses' work hours on vigilance and patients' safety, *American Journal of Critical Care*, Vol. 15, pp. 30-37.

Siu O-l, Phillips DR and Leung T-w 2004, Safety climate and safety performance among construction workers in Hong Kong: The role of psychological strains as mediators, *Accident Analysis and Prevention*, Vo. 36, pp. 359-366.

Sinclair RC, Smith R, Colligan M, Prince M, Nguyen T and Stayner L 2003, Evaluation of a safety training program in three food service companies. *Journal of Safety Research*, Vol. 34, No. 5, pp. 547-558.

Singer SJ, Gaba DM, Falwell A, Lin S, Hayes J & Baker L 2009, Patient safety climate in 92 US hospitals: Differences by work area and discipline. *Medical Care*, Vol. 47, pp. 23–31.

Social Security Organization (SOCSO), 2008, Ministry of Human Resources.

Vinodkumar MN and Bhasi M 2010, Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis and Prevention*, Vol. 42, pp. 2082-2093.

Table 1

Results of Multiple Regression Analysis

	Dependent variable: Perceived Compliance with Safety Behavior
Independent variables	
Job safety	.001
Co-worker safety	.164**
Supervisor safety	.183**
Management safety	-.253
Satisfaction with safety program	.502**
R^2	.463

Note.

* p< 0.05, ** p < 0.01