

MANAGING SAFETY: THE ROLE OF SAFETY PERCEPTIONS APPROACH TO IMPROVE SAFETY IN ORGANIZATIONS

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Abstract

This study was carried out to investigate current practices and attitudes towards the management of Occupational Health and Safety (OHS) in a public hospital in northern region of Malaysia. Data were collected using a set of questionnaires. Data analysis was done using descriptive statistics, Pearson correlation and multiple regressions. Empirical evidence indicated that there were no differences in safety reporting, safety satisfaction, errors and incidents, safety rules, safety communication, training & competence, work pressure, management commitment, roles of supervisor and leadership style faced by the male and female workers. In addition, the results also showed that there were no significant differences for seven variables such as safety reporting, errors and incidents, safety rules, safety communication, training & competence, work pressure, and management commitment but there were significant effects for three variables: safety satisfaction, roles of supervisor, and leadership style among the respondents with four types of education level. The findings suggested that there was a significant positive correlation between safety satisfaction and seven elements of OHS management namely safety reporting, errors and incidents, management commitment, work pressure, role of supervisors, safety rules, and leadership style. The regression analysis revealed approximately 54.8% ($R^2 = 0.548$) of variance in safety satisfaction that was explained by the nine independent variables. In conclusion, the results highlighted an important finding: the employees perceived that there was a need to improve the workplace by perceived that there was a need to improve the workplace by emphasizing all the OHS management practices as significant in relation to safety.

Keywords: OHS Management, Safety Satisfaction

Introduction

An important agenda in today's world is for every organization, especially in the service industry, to maintain survival in the competitive environment. For many decades, most organizations have focused on quality to ensure their survival but in recent years, the trend has shifted to include occupational health and safety (OHS) as one of the determinants of an organization's competitiveness through productivity improvement and efficiency (LaMontagne et al., 2004). Organizations started to show interest in health and safety management because of following reasons (Hale et al., 1997):

- a. Regulatory interest to comply with Occupational Health and Safety Act;
- b. Reports on major disasters that emphasize the failings of management to protect the health and safety of their workers;
- c. The Government's requirement for occupational health and safety management systems to assist organizations to comply compliance with the regulations; and
- d. Increased awareness of corporate responsibility.

Therefore, effective health and safety management and its relation to productivity have been considered an important element when managing the interaction between systems and people. Many organizations experience problems in managing health and safety at work, as the "people" element tends to engage in safe or unsafe behavior according to their interpretation. Accidents have been related to some uncontrollable cause with regard to engagement of unsafe behavior while doing some activity. Herbert W. Heinrich, an early pioneer of accident prevention and industrial safety discovered that 88 percent of industrial accidents originated from human factors (Goetsch, 2005) and in recent years, safety experts estimated that human factors contributed to 80% – 90% of all industrial accidents (Fleming *et al.*, 1999).

For this reason, the implementation of effective OHS management in Malaysian companies will assist to resolve OHS problems successfully. It is also a means to legal compliance. In addition, the need for research on the effectiveness of OHS management elements is vital to ensure continuous OHS performance improvement in Malaysian organizations.

Literature Review

The importance of safety management in high reliability industries is extremely critical as major disasters such as the Chernobyl incident have exposed that people neglected the correct procedure in doing their jobs (Fleming et al., 1999). In addition, the poor attitude of management towards occupational health and safety has had a major role in poor accident records (Coyle et al., 1995). According to Blegen et al., (2005), numerous studies have attributed the following factors to worker's injury:

- a. Supervisor's attitudes, actions, expectations and communications
- b. Supervisor's tasks that include safety

- c. Senior management and workers involvement in safety issues
- d. Organization's commitment to safety and willingness to solve safety problems
- e. Attitude and behavior of workers

Previous research has shown that high rates of injury and accidents are due to unsatisfactory or non-existent of health and safety systems (Lin *et al.*, 2001). A study on workplace injury and management practices by Hassan *et al.*, (2005) exposed that lack of communication and feedback and employee participation were significantly related to injury rates.

Moreover, Vassie *et al.*, (2001) survey of health and safety management in the manufacturing sectors indicated that empowered workers who played active health and safety role enhanced their health and safety performance although the empowerment was limited. Despite the fact that employee participation and involvement are crucial, the accountability and responsibility in the safety and health must come from senior management as required by the Occupational Health and Safety Act (Vassie *et al.*, 2001). This is confirmed by a study done by Norfairuz (2003) in the construction site in Kuala Lumpur and Selangor. She discovered that ignorance and lack of safety compliance from the management had caused employees to violate the safety procedure and the outcomes were unsafe acts, hazardous condition, injuries and accidents. She also found that the awareness on the importance of safety compliance among many construction companies was low. Nevertheless, a study of safety compliance among the manufacturing employers by Mohd Khan *et al.*, (2005) revealed that majority of the manufacturing companies complied with safety and health regulation and management commitment showed significant interaction in the compliance.

Besides management commitment, safety training and safety policy are also important determinants to enhance safety performance. Lin *et al.*, (2001) found that clear policy statements and safety training played an important role in reducing accident rate. In addition, a company's objective and communication of the objective to all workers is a crucial aspect of effective health and safety management as lack of communication may hinder employee involvement (Vassie *et al.*, 2001).

In sum, many previous studies have shown and debated various dimensions of OHS management scale. As such, a combination of different dimensions in an instrument can ensure a high reliability of the health and safety management measurement and thus organizations can enhance their understanding of employees' perception to ensure improvement of their safety performance.

The purpose of this pilot study was to gain a better understanding of the practices and attitudes of hospital employees regarding occupational health and safety management. The results of this study will be used to inform a more comprehensive investigation.

Methodology

The population of this study includes all hospital employees from a district hospital in Kedah, Malaysia. A Public hospital was selected as the hospital provides basic healthcare needs to the public and must retain patient safety practices; hospital employees are

involved in various health and safety issues related to healthcare facilities; and public hospitals are listed as one of the top ten institutions that have the highest accident rates compared to other public service sectors (SOCSO, 2009).

There were about 210 employees in this district hospital. The appropriate sample size for this study was 136. The sample size ($n = 136$) was determined using Krejcie et al., (1970) table of sample sizes, specifying a 5 percent margin of error, to indicate a representation of the given population. The sample was chosen using stratified proportional random sampling according to occupational groups: physician, nurse, management officer, management support staff, medical officer, and medical support staff.

A survey method was employed. The questionnaire was adapted from the Safety Climate Assessment tool developed by the University of Aberdeen (2004). The scale was modified from a focus on “patient safety” to that of “employee safety” as this survey proposed to investigate employee safety and not the hospital patients.

This tool groups the dimensions into the following sections: safety communication, work pressure, safety satisfaction, management commitment, errors and incidents, role of supervisors, training and competence, safety rules, safety reporting, and leadership style. The questionnaire was intended to identify perceptions on the implications of OHS management dimensions towards their OHS performance. The questionnaire was distributed to selected employees in the occupational group.

Severally the questionnaire survey seeks information on the following two sections: (1) demographic of personnel; and (2) survey regarding the dimensions listed above. The items are accompanied by a 5-point rating scale ranging from “strongly disagree” (1) to “strongly agree” (5). A total of 52 questionnaires were returned giving a response rate of 38.2%. Analysis of data was done using statistical analysis from the SPSS. Descriptive methods were used to simplify and characterize the data. Further analysis includes correlation testing, one-way Anova, t-test, and regression. Significance was set at a two-tail with an alpha level of 0.05.

Results

Demographic information

From Table 1 reveals the demographics information where majority of the respondents were above the age of 40. There were about 76.9% female and 23.1% male comprising three ethnic groups of Malaysia, namely Malay (82.7%), Chinese (13.5%) and Siamese (3.8%). About 42.3% of the respondents were diploma holders, and 25.0% SPM holders. Other qualifications included 21.2% degree holders, 7.7% STPM holders, and 1.9% certificate and SRP holders. Job positions of the respondents were those a physician, radiographer, paramedic, pharmacist, respiratory therapist, nurse, and supporting staff. Fifty two percent of the respondents worked as nurse and employees have worked for more than 10 years.

Generally employees work for five to six days per week. About 50.0% of the employees work between 41 to 60 hours per week. As for the working mode, majority worked in the shift work arrangement, which is 55.8% while 44.2% work in the normal shift.

Table 1: Demographic Information

	Age Group	Frequency (Percent)
Age in Years (n = 52)	20 - 24	1 (1.9)
	25 - 29	11 (21.1)
	30 - 34	7 (13.5)
	35 - 39	7 (13.5)
	40 & >	26 (50.0)
	Gender	Frequency (Percent)
Gender (n = 52)	Male	12 (23.1)
	Female	40 (76.9)
	Race	Frequency (Percent)
Race (n = 52)	Malay	43 (82.7)
	Chinese	7 (13.5)
	Siamese	2 (3.8)
	Education Level	Frequency (Percent)
Education Level (n = 52)	*SRP	1 (1.9)
	*SPM	13 (25.0)
	*STPM	4 (7.7)
	Certificate	1 (1.9)
	Diploma	22 (42.3)
	Bachelor Degree	11 (21.2)
	Job Position	Frequency (Percent)
Job Position (n = 52)	Physician	8 (15.4)
	Radiographer	2 (3.8)
	Paramedic	6 (11.5)
	Pharmacist	3 (5.8)
	Respiratory Therapist	2 (3.8)
	Nurse	27 (52.0)
	Supporting staff	4 (7.7)
	Tenure (year)	Frequency (Percent)
Years in Service (n = 52)	< 1	4 (7.7)
	1 - 5	17 (32.7)
	6 - 10	9 (17.3)
	> 10	22 (42.3)

* SRP (*Sijil Rendah Pelajaran*) – Lower Certificate of Education

* SPM (*Sijil Pelajaran Malaysia*) – Certificate of Malaysian Education

* STPM (*Sijil Tinggi Pelajaran Malaysia*) – Higher Certificate of Malaysia Education

Validity and Reliability of Instrument

The internal consistency reliability coefficient for this study was 0.948. Validity of this instrument was measured by content validity and concurrent validity. Content validity assessment by safety experts disclosed that inappropriate, redundant, and low item-

total correlation was deleted. The results also suggested that the concurrent validity between independent variables and dependent variable (safety satisfaction) implicated enhanced independent variables predicted increased safety satisfaction.

Priorities of employee's perception

The employee's perception on occupational health and safety practices was measured by ten dimensions as shown in Table 2. Among the ten dimensions, training and competence was perceived as fairly high with a mean of 3.88 and standard deviation of 0.42 while leadership style was perceived as rather low with a mean score of 2.06 and standard deviation of 0.79.

Table 2: Priorities of employee's perception elements

Variables	Tenure (year)	Frequency (Percent)
1. Training and competence	3.88	0.42
2. Safety reporting	3.56	0.38
3. Safety satisfaction	3.50	0.47
4. Errors and incidents	3.44	0.56
5. Management commitment	3.40	0.32
6. Work pressure	3.37	0.37
7. Role of supervisors	3.35	0.45
8. Safety rules	3.35	0.40
9. Safety communication	3.29	0.38
10. Leadership style	2.06	0.79

Differences between variables among genders

Based on the research findings, a t-test analysis was used to access the statistical significance of the differences between male and female employee's perception on all variables. Empirical evidence indicated that there were no differences in safety reporting, safety satisfaction, errors and incidents, safety rules, safety communication, training & competence, work pressure, management commitment, roles of supervisor and leadership style faced by the two categories of workers. Thus, the research hypothesis was not supported by this pilot study. It was seen that the male and female workers perceived no significant difference on all variables.

Differences between level of education and all variables

One-way ANOVA was used to test the differences between the level of education (SPM & below, STPM, Certificate & Diploma, Degree) and the ten variables (safety reporting, safety satisfaction, errors and incidents, safety rules, safety communication, training & competence, work pressure, management commitment, roles of supervisor and leadership style). From Table 3, there was no significant difference for seven variables such as safety reporting ($F=1.009$), errors and incidents ($F=1.216$), safety

rules ($F=1.141$), safety communication ($F=1.699$), training & competence ($F=0.556$), work pressure ($F=1.542$), and management commitment ($F=1.336$). Table 3 also shows significant effects for three variables, namely, safety satisfaction [$F(3, 50) = 3.914, p < 0.005$], roles of supervisor [$F(3, 50) = 3.267, p < 0.005$] and leadership style ($F(3, 48) = 4.850, p < 0.005$). Bonferroni tests indicated where the significant lie: safety satisfaction (level of education: SPM & below, Certificate & Diploma, Degree), roles of supervisor (level of education: Certificate & Diploma, Degree), and leadership style (level of education: SPM & below, Degree).

Table 3: One-way ANOVA analysis

Variables	F	Sig
1. Safety reporting	1.009	0.397
2. Safety satisfaction	3.914	0.014
3. Errors and incidents	1.216	0.314
4. Safety rules	1.141	0.343
5. Safety communication	1.699	0.180
6. Training & competence	0.556	0.647
7. Work pressure	1.542	0.216
8. Management commitment	1.336	0.274
9. Roles of supervisor	3.267	0.029
10. Leadership style	4.850	0.005

Intercorrelation among variables

A Pearson correlation analysis was used to test the association between all elements of OHS management. The analysis shows that a significant positive correlation exists between safety satisfaction and seven elements of OHS management namely safety reporting, errors and incidents, management commitment, work pressure, role of supervisors, safety rules, and leadership style [$p < 0.05$, where p was in the range of 0.039 and 0.000] with a correlation coefficient (r) range between 0.290 to 0.558.

Relationship between OHS management and safety satisfaction

Multiple regression analysis was used to evaluate the effects of independent variables on dependent variable (safety satisfaction). The model indicates that approximately 54.8 per cent ($R^2=0.548$) of the variance in safety satisfaction are jointly explained by nine independent variables. The F value = 5.261 at $p < 0.000$ suggesting that the nine independent variables have significantly explained 54.8% of the variance in safety satisfaction. However, only error and incidents has a significant relationship on safety satisfaction at 95% confidence level with standardized beta of 0.397 ($p < 0.05$).

Discussion

The purpose of this study was to examine the practices and attitudes of hospital employees regarding the elements of occupational health and safety management that should be considered in meeting their OHS obligations. The following explains the attainment of the study objectives.

Descriptive statistics were used to measure the elements of occupational health and safety management that is perceived to be the most important among employees. As indicated by the survey results, the mean of employees' perception on occupational health and safety practices was between the ranges of 2.06 to 3.88, thus indicating a mixture of 'disagree' and 'almost agree'. The results indicated that the general view of the employees with regard to their occupational health and safety practices was fairly low. This study, in line with other studies found by HSE (2005), indicated that employees' knowledge and practicing of health and safety were a matter of 'common sense' and the issue of health and safety was terribly complicated that they found the legislation, regulations and requirements not easy to understand. Moreover, HSE noted that there was also a tendency to view health and safety practices as preventing quick and effective working. Therefore, if this type of perceptions were to be ignored by the management and proper training is not dealt with, it could lead to negative consequences to the individual and the organization. As a matter of fact, findings from previous studies also showed a relationship between employee pessimism and poor safety performance (Oyan, 2000). For that reason, organizational culture is vital in determining that employees and employers have a high priority to implement the best practices in health and safety.

A T-test analysis was used to access the differences between male and female employee's perception on safety reporting, safety satisfaction, errors and incidents, safety rules, safety communication, training and competence, work pressure, management commitment, roles of supervisor and leadership style. Consistent with study by HASWIC (1997), the results of this study revealed that health and safety issues affect both men and women at work. Therefore, according to HASWIC (1997:15), "analysis by gender is important to identify where there are significant gender-based differences in occupational injuries and illness". Even ILO (2003) supported this argument and highlighted that every year there are 270 million occupational accidents and 160 million occupational diseases happen in the workplace.

One-way ANOVA was used to test the differences between level of education (SPM & below, STPM, Certificate & Diploma, Degree) and ten variables, namely, safety reporting, safety satisfaction, errors and incidents, safety rules, safety communication, training & competence, work pressure, management commitment, roles of supervisor and leadership style. The results disclose that health and safety issues affect all people at work, regardless whether they are educated or not. The outcome of this study is congruent with the ILO (2005) study that indicates work-related accidents and ill-health are preventable and collaboration amongst all concerned can accomplish this mission with a positive commitment.

The outcome of the Pearson correlation analysis indicates that the employees were not satisfied with safety communication, and training and competence elements while lower satisfaction was indicated for the work pressure element. The results of this study are supported by the MRS (2003) study at General Chemical-Richmond Works Facility that shows there is no reliable communication of a safety vision as managers and employees do not feel motivated by the company's safety slogans and safety messages. Furthermore, the ILO's philosophy of prevention and protection in the field of occupational safety and health supports this study and indicates that "and whereas condition of labour exist ...to produce unrest so great that the peace and harmony of the world are imperiled; and an improvement of those conditions is urgently required; as, for example, by the regulation of the hours of work, including the establishment of a maximum working day and week ... the protection of the workers against sickness, disease and injury arising out of his employment ..." (Alli, 2001:3). Thus, consistent communication of safety and health legislation, regulations and requirements and safety and health training regarding their work duties are vital to enhance safety performance.

The outcome of multiple regression analysis demonstrates the effects of independent variables on dependent variable (safety satisfaction). The model indicating that the nine independent variables have significantly explained 54.8% of the variance in safety satisfaction. The findings of this study are supported by Murphy (2003) when he states that safety does not 'just happen' and committed employees will help build a safer, compliant and more efficient workplace. Furthermore, he also emphasized that individual accountability is the main factor in safety mission where it must be expanded to all departments and which starts from the management to all employees.

Conclusion

The purpose of this study was to examine the perceptions of employees on OHS management in their workplace. The results of the study were examined using t-test, one-way ANOVA, correlation and multiple regression analysis. This study has confirmed an empirical relationship between the nine dimensions of OHS management and the outcome variable: safety satisfaction. All the constructs demonstrated an acceptable internal consistency.

The study results highlight an important finding: the employees perceive that there is a need to improve the workplace by emphasizing all the OHS management practices as significant in relation to safety. Previous research has demonstrated that effective OHS management is critical in ensuring that people do not overlook the correct procedure in doing their job. This is because safety at the workplace is mandatory for every employer. Although reducing workplace accidents and diseases is a major challenge for organization, it is preventable.

To deal with it effectively, a 'culture of safety' and commitment from the top management are essential to achieve a high safety performance. A positive safety culture can be achieved when it is supported by formal management systems, fully implemented and funded, together with disciplined employees. Therefore, there is a need for ongoing commitment and determination from all parties concerned to

improve safety performance in an organization. These aspects will be explored in a more comprehensive study.

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