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Tan Fee Yean

Examining the Influence of Self-efficacy and Actively Caring on Safety Behaviour

Tan Fee Yean, Harvinder Kaur a/p Lakhbeer Singh

School of Business Management, College of Business, University Utara Malaysia

E-mail: feeyean@uum.edu.my

Abstract

The aim of this study is to examine the relationship between self-efficacy, actively caring and safety behaviour. Data was gathered through questionnaires from a sample of medical laboratory technologists (n = 130) who worked in a research and diagnostic public medical hospital in Klang Valley, Malaysia. Using partial least squares (PLS) analysis method, the results showed that self-efficacy and actively caring have positively influenced safety behaviour among respondents. Discussions articulated on the plausible explanations for the results. Finally, the theoretical and practical ramifications of this study are brought to fore.

Keywords: Self-efficacy, Actively Caring, Safety Behaviour, Medical Laboratory Technologists.

1. Introduction

The medical laboratory services in Malaysia were established at the end of the 19th century to support the development of medical practices in this country. In Malaysia, majority of medical laboratory technologists (MLTs) works either in public hospital laboratories or research institutes such as the Institute of Medical Research (IMR). Some are also employed in public university laboratories like those set up by Universiti Malaya (PPUM) or Universiti Kebangsaan Malaysia (HUKM). Generally, the main job duties for MLTs are to examine body fluids and tissues for abnormal chemical levels, the presence of cells or bacteria and prepare tissues for microscopic examination.

As MLTs job often involves working and dealing with infectious patients and samples, they are known to be three to nine times more likely than the general population to become infected with laboratory-acquired infection (Sewell, 1995). In 1980, the annual workload reported by the laboratory service in each state ranged from 200,000 to 650,000 tests (Singh, 1982). The numbers was not reduced, but increase dramatically, which it was estimated that about 240 million pathology laboratory tests were performed in Malaysia in 2006 (Looi, 2008). These increase tests have brought about new hazards and dangers to MLTs as they are exposure to infection bacteria, radiation, toxic, flammable chemicals as well as electrical hazards. Since most MLTs work with disease producing agents such as bacteria, viruses and fungi, many cases of ingestion or exposure through mouth, hand, breathing or animal bites have been reported. In addition, MLTs are also exposed to the long-term risk that involved when handling carcinogenic chemical reagents (Clinical and Laboratory Standards Institute, 2011). All of these showed that medical laboratories personnel were experiencing high risk of occupational hazards.

According to Anuar, Zahedi, Kadir and Mokhtar (2008), the average incident rate for MLTs in Malaysia is 2.05/100, which means every 100 MLTs currently employed at least two will at risk due to hazards related to their job. Statistics show that 25.3% of the total laboratories acquired accidents and injuries was due to cuts by sharp objects, 19.9% was exposure to biohazard and chemical substances, 16.8% was needle prick injury and 14.7% was due to fire, fall/slip and gas leak (Anuar et al., 2008). From each of the infection and accident cases reported, it has become even more apparent that MLTs unsafe act (i.e. human errors) is the major cause for laboratory acquired accidents and injuries. DuPont (1991) study indicated that unsafe act is the major contributor to nearly all injuries and deceases at workplace. It is important to recognize that MLTs is inherently in a risky occupation.

However, to date there has not been much study undertaken to address behavioural based safety aspect that may help to improve the safety compliance of a medical laboratory technologist. Most studies have focused on safety performance directly through peer observations of safety behaviours, safety goal, performance feedback, and incentives for safety performance (Geller, 2001; McSween, 2003). Very little research is available, which explores the reciprocal relationship between

co-workers' unsafe act, workplace accidents can be avoided. In an actively caring culture, each employee will proactively feel responsible for their own as well as co-workers' safety. They will continually seek ways to enhance workplace safety and working hard to create an injury-free environment. Therefore, this study proposed that:

Hypothesis 2: Actively caring is positively related to safety behaviour.

3. Research framework

The research framework in this study is built upon literature review. It is therefore theorized that self-efficacy and actively caring have an influence on safety behaviour. Figure 1 depicts the research framework of this study.

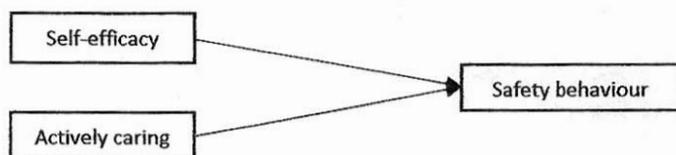


Figure 1. Research framework

5. Methodology

4.1 Subjects

The population of this study consisted of medical laboratory technologists (MLTs) who have completed their Diploma in Medical Laboratory Technology and are currently employed or are bonded in service. They encompassed those who are currently working in diverse medical laboratories (i.e. multi-disciplinary laboratories) in a research and diagnostic public medical hospital in Klang Valley, Malaysia. This study used the non-probability sampling technique (i.e. convenience sample) as the samples were selected on the basis of their accessibility. A total of 145 sets of questionnaires were distributed. Only 130 set of questionnaires was returned and usable for data analysis, indicating that the response rate of 89.66%.

The respondents consisted of 40 male and 90 female. A total of 46.2% of the respondents are in the age group of 20–30 years old. The majority of respondents or 67.7% were married and 83.8% were Diploma holders. Half of the respondents (50%) indicated that they have worked in current medical hospital for less than 10 years.

4.2 Measurements

Self-administered questionnaires were used for data collection. The questionnaires comprised of three sections with 27 items measuring both independent and dependent variables. Specifically, there are nine questions to gauge self-efficacy, actively caring, and safety behaviour, respectively. Each items used a 5-point Likert scale with the following responses: 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. The questionnaire for measuring self-efficacy was adapted from Bandura (1997). Meanwhile, the actively caring and safety behaviour items were adapted from Geller and Roberts (1993).

6. Findings

5.1 Validity and Reliability Analyses

Data was analysed using Smart PLS 2.0. As shown in Table 1, the factor loadings of all observed variables or items are generally high, ranging from 0.558 to 0.800. However, SE4, SE5, SE6 and SE9 (i.e. items of self-efficacy) was deleted from further analysis due to its low loading value.

Table 2
Discriminant validity of constructs

Constructs	α	M	SD	1	2	3	4
1. Actively caring	0.882	3.953	0.695	0.515			
2. Self-efficacy	0.732	4.051	0.539	0.281	0.490		
3. Safety behaviour	0.902	3.762	3.762	0.214	0.203	0.564	

Note: α = Cronbach's alpha; M = mean; SD = Standard deviation; Diagonals (in bold) represent the AVE while the other entries represent the squared correlations

6.2 Partial Least Square (PLS) Analysis

Table 3 presents the results of the PLS analysis. The R^2 value was 0.273 indicating that self-efficacy and actively caring explained 27.3% of variance in the safety behaviour. The results of the study also showed that actively caring had a positive influence on safety behaviour among respondents ($\beta = 0.312$, $t = 4.486$, $p < 0.01$). In a parallel fashion, self-efficacy was also found to have a substantial impact on safety behaviour ($\beta = 0.286$, $t = 3.662$, $p < 0.01$). Hence, hypothesis 1 and hypothesis 2 posited earlier in this study was supported. Additionally, of all the two predictors examined in this study, actively caring was found to be the most significant factor in predicting safety behaviour among MLTs.

Table 3
Path coefficients and hypotheses testing

Hypothesis	Relationship	Coefficient	t value	Supported
H1	Actively caring → Safety behaviour	0.312	4.486	Yes
H2	Self-efficacy → Safety behaviour	0.286	3.662	Yes

7. Discussion

The primary objective of this study was to examine the influence of self-efficacy and actively caring on MLTs' safety behaviour. The statistical results showed that actively caring was positively related to safety behaviour. Importantly, actively caring was reported to be the most important factor that predicted safety behaviour among MLTs. This finding was consistent with the study of Geller (1996), who found that if employees are concern enough on their co-workers' unsafe act, workplace accidents can be avoided as they will continually remind and warning each others about the importance of safety compliance. This suggested that MLTs' safety behaviour can be promoted through their actively caring. MLTs should develop a sense of responsibility in taking care of their own and co-workers' safety and health. Laboratory acquired infection and injuries can be avoided if MLTs take the initiative to create positive changes in their working environment by limiting human errors and continuously looking for various approaches to improve safety and health at workplace.

Besides that, the results of this study also reported a significant influence of self-efficacy on safety behaviours among the respondents. This finding is consistent with the study of Strecher, DeVellis, Becker and Rosenstock (1986), who found that a strong sense of self-efficacy tend to promote employees' safety behaviour. This means if MLTs possess high level of self-efficacy, they are more likely to contribute to their own safety by avoiding "shortcut" from safe work procedures. In other words, MLTs' self-efficacy is related to subsequent safety behaviour change. If MLTs belief that they have the capabilities to do their routine works effectively, possibilities for them to engage in risky or unsafe act can be limited because they are well-learned with the work procedure and able to comply with safety requirements and policies at all times. Therefore, for those who have high self-efficacy, he/she is more likely to engage in safety behaviour.

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