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**EFFECT OF SAFETY MANAGEMENT ON PERCEIVED SAFETY  
PERFORMANCE AT PUBLIC HOSPITAL IN PERAK**



**Thesis Submitted to  
School of Business Management College of Business,  
Universiti Utara Malaysia  
in Fulfillment of the Requirement for the  
Master of Science (Occupational Safety and Health Management)**



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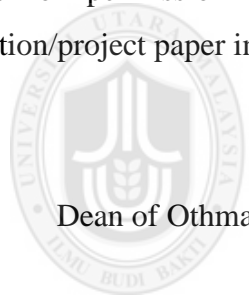
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## ABSTRACT

Safety management is designed to managed the occupational safety at workplace and it has a crucial role for accident prevention program at workplace. It also influenced employee motivation and their concern towards the safety performance directly and indirectly. This study is to review relationship between safety management and safety performance. The survey applied the self-administrative questionnaires involved 215 Assistant Medical Officer and nursing sister at grade U32 or higher who are worked at public hospital in Ipoh Perak. Statistical Package for Social Sciences (IBM SPSS Statistics 23.0) were used for analyzing the raw data whereas descriptive and inferential analysis was conducted to fulfill the objective of study. Correlation analysis show the strong relationship between safety management as the independent variable was significant towards dependent variable, safety performance at .001 level ( $r = .272$  and  $p = .000$ ;  $p < 0.01$ ). Furthermore, regression analysis shown there were three dimensions of safety management were significantly related to safety performance which are safety concern, safety policy and safety motivation.

**Keywords:** Safety Management, Safety Performance, Safety Concern, Safety Policy and Safety Motivation.



## ABSTRAK

Pengurusan keselamatan adalah menguruskan perkara yang berkaitan keselamatan di tempat kerja dan mempunyai peranan yang amat penting untuk mengurangkan kemalangan di tempat kerja. Ia mempengaruhi motivasi dan keperihatinan pekerja secara terus atau pun tidak terhadap prestasi kerja mereka. Kajian ini bertujuan untuk mengetahui hubungan antara pengurusan keselamatan di tempat kerja dengan prestasi kerja. Kajian menggunakan borang soalselidik yang diedarkan kepada 215 Penolong Pegawai Perubatan dan Ketua Jururawat gred U32 dan ke atas yang bertugas di hospital awam di Ipoh Perak. Data terkumpul dianalisa menggunakan SPSS 23.0 dan data juga dianalisa secara diskriptif dan inferential bagi memenuhi objektif kajian. Analisa kolerasi yang dilakukan mendapati pengurusan keselamatan di tempat kerja ada hubungkait dengan prestasi kerja pada aras .001 dimana nilai  $r=.272$  dan  $p=.000$ ;  $p<0.01$ . Penganalisan data menggunakan analisa regresi menunjukkan dimensi pengurusan keselamatan (*safety concern, safety policy and safety motivation*) mempunyai hubungkait dengan prestasi kerja yang signifikan.

**Kata Kunci:** Pengurusan Keselamatan, Prestasi Keselamatan, Soal Keselamatan, Polisi Keselamatan dan Motivasi Keselamatan.



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# CHAPTER 1

## INTRODUCTION

Chapter one described general overview of this study. It contained research background, overview of Hospital Raja Permaisuri Bainun Ipoh (HRPB), occupational safety and health practices in HRPB, problem statement regarding this study, research question and objective of this research. This chapter highlighted the area of study, organization of the overall dissertation and conclusion.

### 1.1 Background of the Study

Malaysia Occupational Safety and Health Act 514 had been enacted since February 1994 and accountability given to Department of Occupational Safety and Health or (DOSH) to apply this act towards all industries except arm forces and shipping. According to Malaysian Department of Occupational Safety Health report 2017, accident at work place was 42,513, with 1.81% of total accident or 711 deaths due to accident occurs at workplace. Impact of accident at workplace or work related accident give so much negative effect rather than positive effect in an organization even to the country itself. Its not just effect the workers alone, but also the surrounding such as might lead to mortality, morbidity, lost of skilled workers, property or other damage. This indeed involved increase costing for medical expenses, compensation, and many more implication to the workers and family itseft and also to the organization.

Occupational safety and health (OSH) aim was to secure and improve safety at workplace, as well as healthiness and welfares of of the workforce at their workplace. Alli (2008) describes the proses of OSH management as an art of the recognition and evaluation to anticipate and control the hazard rising within workplace environment that can cause harm to the health and well-being of employees. OSH is an essential element in an organization to growth employees' performance and moral, and organization financial implication (Ganesh CS & Krishnan R, 2016). A safe working environment guarantees employees' safety and health which benefits organizations productivity and economic efficiency of a country (de Kok, Deijl, & Veldhuis-Van Essen, 2013) whereas unsafe workplace condition will incline to affect the employees' capability, satisfaction and performance

According to Grant (2018), most of accident at the workplaces were caused by human factors. The Assistant Medical Officers and nursing sisters Grade U32 and above, managing clinical work is part of their responsibility. They play importance role for safety management for implementation.

The top management in Ministry of Health encouraged all Assistant Medical Officers and Nursing Sisters to lead by example and always consistent with the standard operation of procedures in relation towards safety matters at the workplaces. Effective and established safety management is identified as key for achieving high safety performance. In healthcare industry, specifically in public hospital operations, Assistant Medical Officers (AMOs) and Nursing Sisters were lead their team in every shift of their work. Other than motivates effectively, take ownership of protection directly to their subordinate towards performing the job safely and healthy.

Assistant Medical Officers and nursing sisters within healthcare services were the group of middle level managers that have a legal and ethical obligation to ensure a highest quality of patient care and to strive for improvement of patient care. These two profession Assistant Medical Officers and nursing sisters were in a prime and appropriate position for mandating policies, system of the management, procedures and organization environments. Though, many have argued that it was evident that both healthcare providers Assistant Medical Officers and nursing sisters possess an important and obvious roles in maintained and improve quality of patient care and patient safety that being one of the highest priorities for them.

However, little attention has been done to examine the relationship of ‘safety management’ affect ‘safety performance’ in public hospitals. Thus, this study was conducted tend to fill this gap by examine impact of the both Assistant Medical Officers and nursing sisters’ safety management on safety performance within the context of public hospital. Therefore, this project paper aim to determine the relationship of safety management toward safety performance at Hospital Raja Permaisuri Bainun Ipoh.

Employees in most industries especially hospital organization the safety and healthy environment is importance elements for them to deliver safer and better quality of services to the patient. Healthy and safe employees is an asset to the health industries such as hospital. As, such losses or injuries can caused significant loss to their employer and families (Bastion Safety Solutions, 2018). Effective assessment of safety performance can provide indicator for improvement related not only to safety but also to quality and ability of employees.

Previous studies stated that accident, injuries and industrial disaster at workplace occurred is due to inadequate safety management and less occupational safety and health campaign activities lead to poor safety performance. Bowander (1987) founded three (3) type of errors that occurred before and after the Bhopal disaster which were human errors, technological and system operation errors. In his study, safety team in the related organization found that safety management were poorly managed.

## **1.2 Area of study**

Area of study was conducted at the Hospital Raja Permaisuri Bainun Ipoh (HRPB) which hospital capacity was having 990 patient bed and with 32 clinical disciplines. Its located in Ipoh City in Perak with 4,200 employees. This hospital capability provides secondary and a few selected national tertiary care and services which cater the people population approximately 65,789 around Ipoh.

The history of Hospital Raja Permaisuri Bainun started its services to the people since 1891 as one of the district hospital at that time and known as Ipoh Hospital. During beginning of the services, the hospital capacity was 50 patient beds. Later on, the need for the services were increased and the hospital was upgraded as a State Hospital in years of 1942. Over the years development took place and the population were increased government through Ministry of Health decided in 1980 to build another 8 stories building nearby to facilitate patients to seek treatment. Other developments include the complex of the specialist clinic during 1992 and the complex of daily treatment (Daycare) on 2005. As recorded, the hospital name was change from Ipoh Hospital into new name as Hospital Raja Permaisuri Bainun (HRPB) on Thursday 12 of June 2008.

Currently, base on the patient bed capacity and the hospital services capability, HRPB know as the third largest hospital in Ministry of Health Malaysia which came after Kuala Lumpur Hospital and Penang Hospital. Capacity of the hospital were 990 patient beds with 16 operating rooms, 32 beds of adult intensive care unit, 12 beds of Obstetrics & Gynaecology intensive care unit, 12 beds for Coronary Intensive Care Unit (CICU), 20 beds paediatric intensive care unit (PICU) and 30 beds neonatal treatment unit.

The hospital provides specialist services in all areas of basic specialty as well as sub-specialties such as cardiology, nephrology, respiratory medicine, hematology, neurosurgery, plastic surgery, and pediatric surgery. Imaging services are equipped with MRI CT scan equipment and mammography machines. Average number of patients seen in specialist clinic were 33,000 per month. Average inpatient 720 per day and outpatient 40,000 per month patients attended in clinics.

Hospital Raja Permaisuri Bainun likewise known as a training hospital for house officer, medical students, Assistant Medical Officers training programme, Nursing and associated health personnel from public an private institutions of higher educations. This hospital also participate in training postgraduate doctors to become specialist.

### **1.3 Problem statement**

This project paper conducted is to determine that safety management and its dimensions which are Safety Concern, Safety Policy and Safety Motivation had influences towards safety performance in Hospital Raja Permaisuri Bainun Ipoh

Perak. The respondents for this study were Assistant Medical Officers (AMOs) and Nursing Sisters Grade U32 or higher. This project paper will propose the practical recommendations for long-term safety improvement.

There were around 374 million cases of non-fatal work-related incident that cause injuries each years according to the report from ILO (International Labour Organization). This accident resulting more that 4 days of absences from workplace. The economical burden rise up from unsafe occupational safety and health practice was estimated around 3.94 per cent of the global gross domestic product for each years.

There were many occupational safety and health hazard challenged faced by Assistant Medical Officers and Nursing Sisters within the hospital environment such as psychosocial, physical, chemical, biological product and many others. As same as others organization, physical and environmental hazard can be found in hospital setting. Commonly founded were situation such as slippery floors, possible of electrical hazard from extension plug, auditory, inappropriate lighting lux, biological hazard from blood, urine or feces sample, chemical and drug product and psychological stress. According to Patterson, (1985), accident at work place most frequently occur during personnel activities were manipulating consumers or equipment. One of the most physical activities that particularly affect healthcare provider was the nature of work as shift rotation to cover 24 hour of day. The issues of possible physical hazards among AMOs and staff Nursing Sisters limited to musculoskeletal stress and work as shift rotation were the most documented in the literature.

Study were conducted in year 2016 on Nursing Sisters related to lower back pain (LBP). The study was conducted on six public hospitals in Penang involving 1292 participants using Malay-validated BACKS tool questionnaire with 5-point Likert scale in data collection. Based on these study, all participants were aged 25-60 years old, with 684 (53%) have working experiences less than five years. Out of 1292 participants, 1152 (89%) of the Nursing Sisters worked at medical specialists hospital while 140 (10.8%) were worked at non medical specialist hospital. There were 76.5% or 989 participants suffered from LBP at a point of time. While Nursing Sisters mobilized patient on beds procedure 851 (86%) of them had LBP whereas 138 (14%) were not had LBP. When patients lifting technique performed with an instrument used 864 (87.4%) had LBP and others 125 (12.6%) were not had LBP.(Ibrahim et al., 2019).

Another study conducted the survey on the prevalence of self-perceived emotional and psychological distress and its relation toward occupational-related musculoskeletal disorders (WRMSDs) in Nursing Sisters. The survey was conducted on 550 Nursing Sisters who employed at public hospital in Klang Valley, Malaysia. Feedback came out describe that out of 550 participant, 273 (73.1%) of the staffnurse experienced WRMSDs symptoms in at least one anatomical site since a year prior to the survey conducted. Most frequent reported on WRMSDs symptoms were related to neck area (48.9%), followed by area of both leg (47.2%), area of upper back (40.7%), area of shoulders (39.9%), and area of lower back with (35.3%). There were less than 20% of Nursing Sisters reported WRMSDs symptoms in the area of thigh or arms. Additionally, the results showed that approximately half of the Nursing Sisters suffered from WRMSDs in region 1 (neck and shoulder with 55.6%), region 4 or

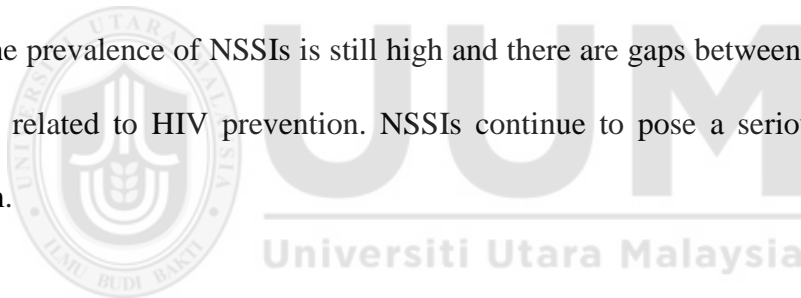
lower limb (thighs, knees, ankles, and feet with 51.9%), region 3 involving (upper and lower back area with 47.9%). There was less than 30% had complained on WRMSDs symptoms in region 2 involving (wrists, arms and hands). N. A. Amin, K. F. Quek, et al (2018).

Furthermore, study about occupational related illness was the occurrence and associated factors of low back pain among doctors in a hospital in Selangor, Respondents' information include on socio-demographic, occupational factors (length of service, average daily working duration, prolonged sitting, prolonged standing, awkward posture, static posture, sudden movement, lifting and forceful movement, physical factors, back care training) and psychosocial factors (job satisfaction, problems with colleagues, problems with employer, boredom in work and stress). There were 63 respondents from 90 (70%) approached, after simple random selected among doctors. The prevalence of low back pain among respondents was 65.1%. There were significant associations ( $p < 0.05$ ,  $n=63$ ), between low back pain and race, prolonged sitting, prolonged standing, awkward posture, lifting and forceful movement, and heavy physical work. Lee K.Y. et al. (2014).

Moreover, cross-sectional study was conducted to determine the prevalence and factors associated with needle stick and sharps injuries in Hospital Serdang Malaysia. Respondent for this was 345 HCWs which are medical assistant officer, staff Nursing Sisters, medical laboratory technician and community. The data were collected through validated questionnaire from 345 respondents in Serdang Hospital. Result shown overall prevalence of needle stick or sharps injuries was 23.5%. Nursing Sisters had the highest prevalence (27.9%) of the needles stick injuries. The causes of

NSSI (Needle Stick and Sharp Injuries) 58% of cases were hypodermic needle and 27.2% cases were recapping. Medical ward reported the highest NSSIs (51.9%). Majority stated that they were aware about universal precaution guidelines (96.5%) and needle stick and sharps injury needs to be reported (99.1%).

However, out of those health care workers (23.5%) who had NSSIs, only 30.9% had reported the incident of needle stick and sharps injuries indicating. There were gaps between knowledge and practice among the HCWs. There was a statistically significant association between NSSIs and age ( $p=0.01$ ) of respondent, working experience ( $p=0.001$ ) and job categories ( $p=0.03$ ). (Rampal et al., 2010). The prevalence of NSSI was 23.5%. Although the knowledge on Universal Precautions is good, the prevalence of NSSIs is still high and there are gaps between knowledge and practice related to HIV prevention. NSSIs continue to pose a serious occupational problem.



#### **1.4 Research Questions**

The research questions are meant to give a richer view on the correlation of the safety management towards safety performance at public hospital in Ipoh Perak. From the independent variables and dependent variables, the research questions (RQ) that have been highlighted in this study were:

RQ1: What is the level of safety performance among Assistant Medical Officers and Nursing Sisters at public hospital in Ipoh Perak?

RQ2: What is the level of safety management among Assistant Medical Officers and Nursing Sisters at public hospital in Ipoh Perak?

RQ3: Is there a relationship between safety management and safety performance among Assistant Medical Officers and Nursing Sisters at public hospital in Ipoh Perak?

### **1.5 Research Objectives**

The main objective of this research is to distinguish the safety management among Assistant Medical Officers and Nursing Sisters at public hospital in Ipoh Perak and its correlations towards safety performance. Thus, the following research objectives were formulated:

- a) To identify the level of safety performance among Assistant Medical Officers and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh Perak
- b) To examine the level of safety management among Assistant Medical Officers and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh Perak
- c) To recognize the relationship between safety management and safety performance among Assistant Medical Officers and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh Perak

### **1.6 Scope of the Study**

Scope of this study is to determine the safety management and its influence toward safety performance in Hospital Raja Permaisuri Bainun Ipoh Perak. For this study, Assistant Medical Officers and Nursing Sisters were selected became respondents. In order to collect the data, researcher used questionnaire adopted from previous study by (Shang et al., 2011)

Assistant Medical Officers and Nursing Sisters were selected as a subject population is due to the following reasons. Firstly, AMOs and Nursing Sisters is a group which doing 40 % of clinical administrative apart of clinical work. Clinical administrative works includes managing staff roster, indenting day to day items, preparing budget for the department and many others administrative work.

Furthermore, AMOs and Nursing Sisters is this group is largest group in Malaysia Ministry of Health. They provide the highest quality of patient care with their expert knowledge and experience. Despite developed good rapport they did screening for patients and initial treatment before further treatment by the medical officers.

### **1.7 Significant of Study**

This research and its findings are important to provide insight into the various safety practices needed to perform successfully in the Hospital Raja Permaisuri Bainun Ipoh. From a practical perspective, the findings of this study will be useful to top management of HRPB as to improve their current safety management.

### **1.8 Organization of the Thesis**

Chapter I serves as an overview of the study by offering a brief understanding of the research context, problem statement, research questions and goals, scope and limitation of the analysis followed by a definition of the main words used in the report. The following Chapter 2, addresses and includes a literature review of the studies to expedite more comprehension. Subsequently, the methodology of the analysis, the research process and the design, the development of the hypotheses for this research as well as the analytical technique and statistical methods used to

analyse the data collected are listed in Chapter 3. The detailed findings and interpretation of the data collected were addressed in Chapter 4, accompanied by discussion and a review of the recommendations in Chapter.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter review the relevant literature on safety management and safety performance. The related dimensions in this study also were discussed, which were safety concern (SC), safety policy (SP), safety motivation (SM), safety compliance and safety participant. Theoretical framework and hypothesis development for this study also were described.

#### **2.2 Overview of Safety Performance**

Safety performance revealed the effectiveness of occupational safety and health management system implementation at the workplace (Nadhim, Hon, Xia, Stewart, & Fang, 2018). According to (Huang et al., 2014), safety performance is referring on employee safety control and self-reported occupational injury. Susan et al. (2008) safety performance reflected perceptions of employees about the safety of their work environment, and provides a background against which day-to-day tasks are performed. These shared perceptions derive from several factors, including management decision making, organizational safety norms and expectations, and safety practices, policies, and procedures which together serve to communicate organizational commitment to safety. Safety performance as proposed by Neal and Griffin (1997) is based on the job performance theories which related to safety knowledge and safety motivation. While Borman and Motowidlo, 1993; Campbell et al., (1993) distinguishes between antecedents of performance, determinants of performance and components of performance. Neal et al. (2000) models of safety

performance that include the antecedents of performance which has been identified at both the individual level and organizational level. The individual level includes ability, experience, and personality, which are tasks of performance. The organizational level includes climate of an organizations, individuals attribute meaning, and value to features of the work environment. The components of performance describe actual behavior of individuals at work, such as safety compliance and safety participations. Organizations with strong safety performance tend to have fewer employee injuries, not only because the workplace has well developed and effective safety programs, but also because the very existence of these programs sends ‘cues’ to employees regarding management’s commitment to safety. If there is evidence that the organization is serious about adherence to safe work practices, then employees are more likely to adhere the safety regulations and procedures.

The findings of this study have several managerial implications. First, senior managers’ safety management is one of the important factors influencing safety performance in container stevedoring operations and must be taken into consideration by terminal operation managers. Main papers relating to senior management were reviewed, and on this basis three key dimensions of senior managers’ safety management were identified: safety concern, SP, and SM. Each dimension appears to be related to a different degree to safety performance in terminal operations. By understanding differences in senior managers’ and supervisors’ safety management, container terminal senior managers can develop effective action plans to enhance their safety performance. The study findings also indicate that both senior managers’ safety management and supervisors’ safety management are valuable sources for safety

performance. As expected, we found senior managers' safety management has a positive association with supervisors' safety management and safety performance. This finding makes sense since senior managers' play an important part in long-term safety success and, essentially, safety concern, SP, and SM inspire organisational members to excel in safety performance. These findings are consistent with those reported in prior studies (Flin et al., 2000; Flin, 2003; Flin and Yule, 2004; FSC, 2006; Hofmann et al., 1995; HSE, 2003; Mearns et al., 2003; O'Dea and Flin, 2001; Wu et al., 2007; Zohar, 2002).

Tsung et al. (2007) defined safety performance as employee's perceptions of safety management in the organization and the perceptions, which are influenced by the organizational factors and individual factors, eventually, affect employee's safety behaviours. The quality of performance in an organization may affect the performance of the organization. Under a positive organizational performance, with a kind and friendly atmosphere, employees are more likely to exploit their potential this situation is beneficial for the organization to achieve its objectives.

Ali et al. (2004) defined that the concept of safety performance can be considered as an alternative management indicator and safety performance as the set of work system conditions and practices which result from safety management. Safety performance was a temporal measure of management, focusing perceptions, values and attitudes at a particular time (Thomas 2000)

Choudhry et al. (2009) provided the definition that safety performance reflects employee's perceptions about the organizations safety management system including policies, practices, and procedures that show how safety is implemented in organization.

Leite (2017) describes safety performance as the safety achievement of a service provider as specified by its safety performance targets and indicators. Safety performance indicator had been identified as the data-based parameter used to monitor and assess safety performance. Safety performance target was a planned or intended objective over a given period. These definitions give a clear indication of the complexity of safety performance measurement. Safety indicators tend to concentrate on major injuries and accidents in many fields, as they are easy to quantify and are thus given more attention.

Safety performance at the workplace were measured to know how safety was applied in an organization. A few researchers described safety performance through two elements comprising safety compliance and safety participation (Griffin and Neal, 2000; Hon et al., 2014; Martínez, Gracia, Tomás, and Peiró, 2011; Nadhim et. al. 2018; Vinodkumar and Bhasi, 2010). Safety compliance refers to safety actions performed by the employees to maintain a safe workplace (Hu, Griffin and Bertuleit, 2016). Safety participation describes a voluntary behavior in safety activities to support safety development at the workplace (Hon, Chan and Yam, 2014; Neal and Griffin, 2006). Employers need to know the employees' safety and protection measure in their workplace. Thus, productivity and the quality of the services were increased.

### **2.2.1 Measurement of The Safety Performance**

There are many approaches for measurement of safety performance. A few scholars applied safety statistic incident record as an indicator for safety performance. According to Barling, Kelloway, & Iverson (2003), the number of incidents can measure safety performance. Furthermore, the measurement on number of incidents at the workplace caused hitches (Hinze, Thurman, & Wehle, 2013; Hon et al., 2014) as irregular number of real incidents at the workplace. However, the researchers faced barrier and cooperation from organization to provide the statistic of incident due to image and reputation of related organization.

### **2.3 Overview of Safety Management**

Safety management is to ensure safety and health of workplace is in place. A safety and health of workplace is necessary as it indicates organizational success and performance. Work in safe and healthy environment is necessary for employee performance. Safety management focuses on safety concern, safety policy and safety motivation of employees safety and health at the workplace, (Vinodkumar & Bhasi, 2010), (Shang et al., 2011).

Employees who are in the mining, construction, transport and manufacturing are the people most vulnerable to the risk of serious accidents and injuries (Bayram et al., 2017) in his study revealed that a mere 10 percent of the rate of accidents in the workplace is caused by machinery and physical conditions of the workplace. Meanwhile, other issues are due to the unsafe acts of employees and employee interaction with the systems in the organization (Wilpert, 1994). In addition, workplace injury or occupational injuries also commonly to occur as a result of

employee unsafe behaviour, the organization factor and ascending risks of the work environment. Thus, occupational safety and health management provides the legislative framework to secure the safety, health and welfare among all workforces and to protect others against risks to safety or health in connection with the activities of persons at work (Dessler, 2011).

Safety management is term used when group of people guided in their actions by their common belief in the importance of safety. Develop join responsibility between an employee to high level of management in the organization. Safety management can be defined as the integration of senior managers' safety management (Andriessen, 1978; OSHA, 1996; Fleming, 1999; Clarke, 1999; O'Dea & Flin, 2001; Zohar, 2002; Wu et al., 2007) put into practice that meet organisational safety objectives and enhance individuals' safety performance in the work environment.

Safety management had various dimensions that aims in prevention of occupational injuries and accidents at the workplace. There were few studies that describes safety management is an involved in managing safety programme such as involve in safety meetings, safety inspections, safety training, safety communication and feedback, position of safety officers, accident investigation, safety posters, procedures and job promotion and placements (Cohen, 1977; Depasquale & Geller, 1999; Griffiths, 1985; Harper et al., 1996; Shannon et al., 1996). However, later study by Vredenburg (2002) defined safety management practices as management commitment, employees involvement, safety training, reward system and employees feedback and communication. Later, Mearns, Whitaker, & Flin (2003) describes the ideal safety management practices as management commitment, employees' involvement, safety

communication and feedback. Vinodkumar & Bhasi, 2010 improves the definitions by describing the safety management practices into six components, which are management commitment, employees' involvement, safety training, safety communication & feedback, safety rules and procedure and safety promotion policies.

The study effects of safety management on safety performance in the container stevedoring operations (Lu and Shang, 2005) stated that three safety management dimensions are used in this study, namely: safety concern (SC), safety policy (SP), safety motivation (SM), and supervisor safety. SC refers to the extent to which a senior manager is a role model.

The USA Occupational Safety and Health Administration (OSHA, 1996) pointed to senior managers' safety management as a key programme element in safety system design. Senior managers' safety management behaviours are vital for creating a work and organisational environment where occupational risks are minimised. These behaviours relate to the allocation of resources, communications regarding the value of safety, and senior managers' management behaviours in the safety context. Wentz (1998) proposed that management should support safety by setting a good safety example; effectively managing safety programmes, attending safety meetings, performing inspections, investigating near-miss accidents and reviewing safety performance at all levels. The Fleming (1999) emphasised on senior managers is importance to be proactive in establishing the safety culture within organisations.

Tsung (2000) safety management and safety performance are often regarded as important concepts, not much consensus has been reached on the cause, the content and the consequences of safety management and performance in the past twenty years. There is an overall lack of models recounting the relationship of both concepts with safety performance. Andriessen (1978) stated that workforce perception of the safety attitudes of senior management is an important factor in influencing motivation to behave safely.

The responsibilities of a supervisor include promoting and implementing occupational safety programs, overseeing safety procedures, ensuring safety rules are followed, providing safety information, acting on safety suggestions from employees, and identifying and controlling workplace hazards to prevent accidents proactively (Lu and Tsai, 2010; Zohar and Luria, 2005).

Through providing information to subordinates or sharing their attitudes or opinions regarding safety, supervisors often act as a driving force influencing the safety of the workplace (Hofmann and Morgeson, 1999; Leiter and Harvie, 1997; Sulzer-Azaroff and de Santamaria, 1980).

Empirical evidence has demonstrated that supervisor safety facilitates not only occupational safety practices (Cohen et al., 1979; Lim, 1997), but also perceived safety (Janssens et al., 1995). Supervisor safety management has been found to be related to a decrease in subordinate accident rates (Hayes et al., 1998) and better safety performance (Thompson et al., 1998; Zohar 2002).

A few studies had been published on safety management related to individual and organizations outcomes towards various industries, such as the nuclear power industry (Kouabenan et al., 2015), the aviation industry (Frazier, 2018), the manufacturing industry (Nordlöf et al., 2017), the construction industry (Loosemore & Malouf, 2019; Mohammadi et al., 2018), chemical industry (Jeong et al., 2015), and the offshore oil and gas industry (Gao et al., 2019).

The concept of safety management had been applied for reducing the rate of accident and injuries at workplace. Safety management plays the crucial role for an accident prevention programme and safety culture development. (Mohammadi et al., 2018, Nordlöf et al., 2017). It also reflects management commitment and organizational safety practices in the organizations. Safety management had positive impact towards organizational safety and management commitment, safety training, safety communication, employee involvement and safety policies and procedures. (Gao et al., 2019; Vinodkumar & Bhasi, 2010)

Based on literature review above the safety management can defined as a subset of organization management and is the shared values and beliefs which characterize safety in an organization. It is the product of individual and group values, attitude, beliefs, competencies and patterns of behaviour that determine a commitment to the way the organization manages the safety. Thus, in this study the safety management was measured by three dimensions which were safety concern, safety policies and safety motivation as stated below:

### **2.3.1 Safety Concern (SC)**

Safety Concern (SC) refers to the extent to which a AMOs and nurses is a role model to employee in Hospital Raja Permaisuri Bainun (HRPB) Ipoh; emphasised on the importance of safety equipment; emphasises their interests in acting on safety policies, is concerned about safety improvement; and coordinates with other departments to solve safety issues (Lu and Yang, 2010). As the principal representative of management, seen daily workers performing the actual ward handling and managing day to day activities is Assistant Medical Officers (AMOs) and nurse in grade U32 and above. AMOs and nurse grade U32 has direct control on the activities of their staffs. The AMOs and nurse grade U32 and above in directing the day-to-day activities of employees, is the key person to ensuring that the ward or unit is a safe place to work, in which management safety concern (SCs) are transmitted to the ward or unit.

### **2.3.2 Safety policy (SP)**

Safety policy is a written statement by the hospital safety management stated the clear mission, responsibility and commitment to ensure the safety and health of employees, patient and public is protected. It contained the essential elements of a safety policy is written and distributed broadly to cover a various area of workplace that post different levels of hazards. It is an endorsed commitment by management to its employees regarding their safety and health.

### **2.3.3 Safety motivation (SM)**

SM relates to the extent which a senior manager creates a motivation system to encourage workers' safety behaviours (DeJoy, 2005; Flin, 2003; Flin and Yule, 2004;

Lu and Yang, 2010; O’Dea and Flin, 2001). Such system may include rewarding safety behaviour, praising workers’ safety behaviours, setting up a safety incentive system, reporting potential incidents and safety suggestions, and encouraging workers’ participation in safety decision.

Based on theoretical framework above, this study was involved two variables, which are the safety management and safety performance. Safety management includes three dimension which are safety concern (SC), safety policy (SP) and safety motivation (SM). Dependent variables in this study were safety performance, while independent variables were safety management.

Senior managers’ safety management can also affect safety management. Thompson et al. (1998) revealed that senior management support for safety positively affected the AMOs and nurse support for safety. Decisions made at senior levels affect the priorities, attitudes, management of AMOs and Nurse Sister (NS) and their subordinate, and are a critical driver for first-line supervisors acting on safety-related practices (Flin and Yule, 2004). Supervisors are the first line management or team leaders in public hospital. Heinrich (1959, p.22) emphasised the important role of supervisor in accident prevention: “The supervisor or foreman is the key man in industrial accident prevention. His application of the art of supervision to the control of worker performance is the factor of greatest influence in successful accident prevention.” Accordingly, we hypothesise that:

## 2.4 Research Framework

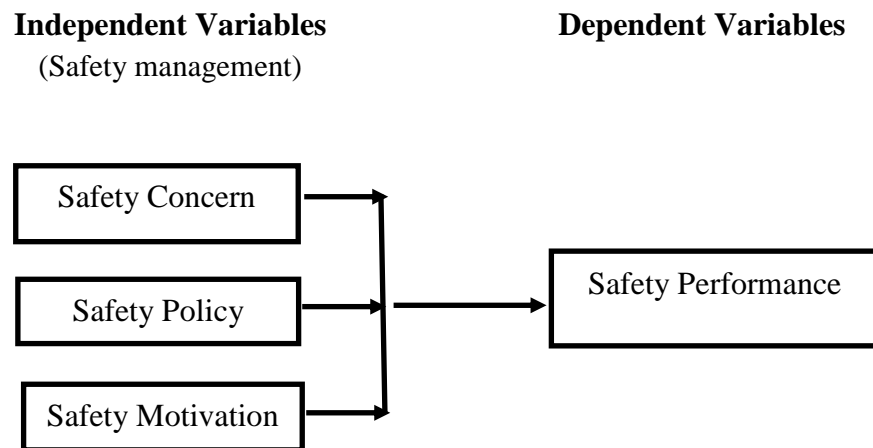


Figure 2.1:  
*Research Framework*

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of worker performance is the factor of greatest influence in successful accident prevention.” Accordingly, we hypothesis that:

## **2.5 Underpinning Theory**

As a summary of the reviews pertaining to the four factors contributing to safety performance in the sub-chapters above, a theoretical framework can be formulated to help determine what are the operational definitions of each of the factors.

## **2.6 Hypothesis**

The hypotheses for this study were developed based on research questions and objectives to examine the relationship between safety management (safety concern, safety policy and safety motivation) and towards safety performance in Hospital Raja Permaisuri Bainun Ipoh

The relationship between dependent variable (DV) and independent variable (IV). When Safety Concern, Safety Policy and Safety Motivation are emphasized in an organization, the value placed on, and attitude towards safety will be transmitted from management down through the organization to the workforce, and resources will be allocated to emphasis the importance of workers’ safety behaviours (Flin and Yule, 2004; Lu and Tsai, 2010). Accordingly, the following hypotheses were proposed:

To attain the objectives of the study, the hypotheses are as below:

- H1: The safety management of AMOs and Nursing Sisters had relationship with safety performance.
- H2: Safety management with respect to Safety Concern of AMOs and Nursing Sisters is positively related to safety performance.
- H3: Safety management with respect to Safety Policy of AMOs and Nursing Sisters had positive relationship to safety performance.
- H4: Safety management with respect to Safety Motivations of AMOs and Nursing Sisters had positively related to safety performance.

## **2.7 Summary**

The literature review focuses on safety management and safety performance and empirical studies that related to safety management towards safety performance. This study will focus on safety management relationship towards safety performance in Hospital Raja Permaisuri Bainun. This research will examine the AMOs and Nursing Sisters on safety management and its influences towards safety performance in Hospital Raja Permaisuri Bainun Ipoh.

Thus, this study focuses on relationship between independent variable which are safety management and its dimension safety concern, safety policy and safety motivation towards the safety performance. In other words, safety performance is a dependent variable whereas safety management is an independent variable. There is dimension in safety management which are safety concern, safety policy and safety motivation.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter discussed the research design, sources of data, unit of analysis, population of study, sample, sampling technique, operational definition and measurements, questionnaire design, pretesting instrument, pilot test, data collection procedures, technique of data analysis and hypothesis testing and chapter summary.

#### 3.2 Research Design

Usually, research design consists three approaches which were exploratory, descriptive and causal design (Hair, Money, Samouel & Page, 2007). This study was applied the descriptive approaches for the research design. According to Sekaran (2003), descriptive study more appropriate for conducting the survey at any time and provides the idea for future research. Furthermore, Cavana, Delahaye and Sekaran (2000), stated that descriptive study is most suitable to gain better understanding of the issue, systematically within use of structured data collection.

Research design could be applied the quantitative, qualitative method and both approaches. This study was conducted in the form of quantitative method. Aliaga and Gunderson (2002) has stated that quantitative research is a process of collecting numerical data that are analyzed using statistically based methods. This method had been chosen because it enables the researcher to measure relationship between related variables. According to Creswell (2003), quantitative research enables better understanding of the factors that influence an outcome. This is the reason why

quantitative research design is selected for this study because relationship between variables can be tested using statistical methods.

The aim of this study is to test on the relationship between safety management with safety performances. This study applied survey questionnaire quantitative data collection. According Spunt (1999) the self-administered surveys are more convenient and less expensive to administer, eliminate interviewer bias, gives respondents privacy, and results can be analyzed faster. Secondly survey questionnaire enables researcher to conduct research on a large sample which can be spread to the entire population.

### **3.3 Type of Study**

#### **3.3.1 Sources of data**

Primary quantitative data was the resource for this study. A self-administered questionnaire survey was conducted in the data collection process, which were distributed by the researcher. This approach was applied due to time and cost constrain and to answer any clarification needed by respondents can be done on the spot.

#### **3.3.2 Unit of analysis**

In this study, the unit of analysis was the individual who worked as permanent AMOs and Nursing Sisters with Grade 32 and above in Hospital Raja Permaisuri Bainun, Ipoh Perak. These staffs had been registered to perform their task and duty at the state hospital.

### 3.4 Population

Population was defined as entire group of people, events or things that was used by researcher in their investigation to test the hypothesis (Sekaran, 2003). According to Cooper and Schindler (2014), population could be people, place, object and cases which a researcher wishes. This study was carried out with the purpose to assess the relationships between safety management of AMOs and Nursing Sisters which in grade U32 or higher towards the safety performance in HRPB. Based on interview with Human Resource Personnel of HRPB the detail staffs who worked in HRPB are shown in Table 3.1 below.

Based on the table 3.1, there were eight categories position in HRPB, with the total number staffs worked in HRPB were 2281 respondents. The total staffs who worked as permanent AMOs and Nursing Sisters were 438 respondents. Thus, the population for this study was 438.

Table 3.1  
*Employee Position in Hospital Raja Permaisuri Bainun Ipoh (n=215)*

No.	Position	Gred	Target Respondent
1	Specialist doctor	JUSA A	4
2	Specialist doctor	JUSA B	66
3	Specialist doctor	JUSA C	16
4	Medical doctor	U56	117
5	Medical doctor	UD41/UD44/UD48/ UD52/U54	573
6	Assistant Medical Officer (AMO)	U41/U42/U44	13
7	Assistant Medical Officer (AMO)	U32/U36	98
8	Nurses	U41/U42/U44	28
9	Nurses	U32/U36	299
10	Others		1127
Total			2281

### **3.5 Sample Size**

According to Cooper and Schindler (2006), sampling is the process of choosing some elements from a population so that it represents that population. Sample is the subset of the population (Zikmund, 2003; & Roger, 2009), which is studied in order for the research to be generalized on the overall population of study (Creswell, 2008). This is because it is unrealistic to collect all the data from this population, therefore the determination of the sample size is important (Zikmund, 2003). It is vital to have a proper sampling design and sampling size because it helps the researcher to appropriately examine and conclude the result from the finding (Sekaran, 2003).

For this study, the table for determining sample size for a given population developed by Krejcie and Morgan (1970) has been adopted. This is because it takes into consideration the level of confidence and precision so that the sampling size error is minimized. Therefore, based on Krejcie and Morgan (1970) table, for a population of 438 employees, thus the minimum sample for this study 215 samples are adequate for the data analysis. This sample size was also according to the Roscoe's rule of thumb (cited in Sekaran, 2007) which is stated that a sample larger than 30 and less than 500 is appropriate for most research.

### **3.6 Sampling Technique**

Research survey could be conducted using two types of sampling which are probability and non-probability sampling. According to Zikmund (2003), probability sampling is a sampling technique in which every member of the population has a chance of being selected in the sample. While the non-probability sampling, the unit of samples are based on personal judgement or convenience (Zikmund, 2003).

In this study, the probability sampling method were applied and the simple random sampling was selected. Simple random sampling is a sampling procedure that allows each individual in the defined population to have an equal and independent chance of being included in the sample (Zikmund, 2003). This method is chosen because of the following:

- a) it is free of classification error
- b) it requires minimum advance knowledge of the population other than the frame.
- c) its simplicity also relatively easy to interpret data collected in this study.
- d) it does not favour any part of the population.

For the above reasons, simple random sampling was chosen where only minimum advanced knowledge of population is needed. It is also easy to analyze data and compute error. Thus, the respondents have an equal chance of being selected which can increase the accuracy, relevancy and the credibility of the research. There are multiple ways of creating a simple random sample. These include the lottery method, using a random number table, using a computer, and sampling with or without replacement.

For this study, the lottery method was chosen because it is the simplest method of selecting random sample. The names of all the Assistant Medical Officers and Nursing Sisters who are in grade U32 or higher retrieved from database of the Human Resources Department of HRPB. All the respondent were arranged in the alphabetical order (from A to Z). Each of the name of Assistant Medical Officers and Nursing Sisters were assigned a number from number 1 to 438 starting from the names in the ascending order of the name list (Example 1: Abu, 2: Bakar and 438: Zamri), to generate the sample. In order to gain minimum sample for this study, 250 Assistant

Medical Officers and Nursing Sisters with grade U32 or higher were selected as the respondents to deliver the questionnaire through google form. The detail was explained in Table 3.2

Table 3.2  
*Random Sampling Generated by Lottery Voting table*

Random Number Table																								
<a href="#">Random Number Generator</a>   <a href="#">Frequently-Asked Questions</a>   <a href="#">Sample Problems</a>																								
250 Random Numbers																								
315	396	356	390	299	403	134	013	282	064	240	348	060	238	425	410	319	430	119	192	119	199			
344	152	191	230	060	376	202	013	055	275	080	014	383	159	125	013	090	285	366	176	128	012			
011	049	243	138	093	293	342	083	073	141	236	010	259	225	352	417	392	260	373	089	087	331			
177	299	264	111	005	348	311	373	308	228	169	228	380	330	335	177	175	379	236	002	041	240			
196	285	120	387	028	087	305	293	349	428	299	002	071	437	223	051	133	177	025	189	326	078			
303	398	183	040	179	272	403	398	101	254	015	370	364	354	218	112	195	298	004	266	434	213			
218	292	210	119	282	422	279	400	279	213	353	192	087	280	039	269	368	195	319	339	169	437			
331	388	320	073	383	390	380	240	268	123	061	293	307	402	334	192	317	054	260	374	436	437			
062	417	316	438	365	007	163	344	232	009	143	118	129	150	337	421	176	311	362	239	270	179			
420	311	303	321	262	096	064	300	018	106	122	410	258	410	188	012	411	120	219	357	361	051			
314	081	398	238	283	436	401	192	203	129	014	134	202	330	238	156	361	170	316	362	279	219			
424	252	069	389	093	391	143	127																	
<p><b>Specs:</b> This table of 250 random numbers was produced according to the following specifications: Numbers were randomly selected from within the range of 1 to 438. Duplicate numbers were allowed. This table was generated on 11/15/2020.</p>																								

Simple random sampling (also referred to as random sampling) is the purest and the most straightforward probability sampling strategy. It is also the most popular method for choosing a sample among population for a wide range of purposes. In simple random sampling each member of population is equally likely to be chosen as part of the sample. It has been stated that the logic behind simple random sampling is that it removes bias from the selection procedure and should result in representative samples (Bajjou & Chafi, 2020).

A list of all members of population is prepared. Each element of Assistant Medical Officers and Nursing Sisters are marked with a specific number (suppose from 1 to  $N$ ).  $N$  items are chosen among a population size. This can be done either with the use of random number tables or random number generator software. The latter option is more preferable as the selection of random samples can be aided by software such as Research Randomizer and Stat Trek. In this way researcher bias can be minimized. There are two popular approaches that are aimed to minimize the relevance of bias in the process of random sampling selection: method of lottery and the use of random numbers.

The method of lottery is the most primitive and mechanical example of random sampling. Within this method the acquired result will have a number for each member of population in a consequent manner, writing numbers in separate pieces of paper. These pieces of papers are to be folded and mixed into a box. Lastly, samples are to be taken randomly from the box by choosing folded pieces of papers in a random manner. The use of random numbers, an alternative method also involves numbering of population members from 1 to  $N$ . Then, the sample size of  $N$  has to be determined by selecting numbers randomly. The use of random number table similar to one below can help greatly with the application of this sampling technique.

### **3.7 Operational Definition and Measurement**

The operational definitions each variable and the measurement of variables for this study were discussed in the following subsections. Discussion started with the definition of each variables followed by the measurement of variables. Safety performance were identified as dependent variable and its measurement was adapted

from questionnaires developed by Shang et al., (2011). Safety management were identified as an independent variable. Safety Concern (SC), Safety Policy (SP) and Safety Motivation (SM) were identified as a dimensions of safety management that influenced safety performance.

Safety Performance, according to Nevhage and Lindahl (2008), safety performance was defined as the quality of safety related work and its improvement in the organization may increase its resistance or robustness and reduce the risk of accidents.

Safety management is a managing the organizations activities and applying principles, framework, processes to help prevent accidents, injuries and to minimize other risk.

Safety management relates to the actual practices, roles and functions associated with remaining safe (Kirwan, 1998). It is usually regarded as a sub-system of the total organizational management and is carried out via the organization's safety management system with the help of various safety management practices.(Vinodkumar & Bhasi, 2010)

Safety Concern is defined as any condition, practice, or violation that causes a substantial probability of physical harm, property loss, and/or environmental impact such as loose railing on a stairwell, tripping hazards and anything that potential to cause harm to people, property, or the environment.

Safety Policy is a recognized, written statement of its commitment to protect the health and safety of the employees, as well as the surrounding community. Safety policy sets out clearly stated about health and safety and ensure complies with the

Occupational Safety and Health Act and relevant state legislation. It included guidelines establishing and implementing programs that will reduce workplace hazards, protect lives and promote employee health.(Cheng et al., 2015).

Safety Motivation were referred to an individual's willingness to exert effort to enact safety behaviors and the valence associated with those behaviors. Individuals should be motivated to comply with safe working practices and to participate in safety activities if they perceive that there is a positive safety climate in the workplace (Neal & Griffin, 2006).

When determining questionnaire items, it is crucial to ensure the validity of their content, since this is an important measure of a survey instrument's accuracy. Content validity is the extent to which a test measures what it is intended to measure (Cooper and Emory, 1995). All the independent variables use 5-point Likert Scale ranging from strongly disagree to strongly agree (1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree). The detail of operational definition and measurement were explained in Table 3.3 till table 3.6.

In this study, Safety Performances were identified as a dependent variable. AMOs and Nursing Sisters' performances measured by safety performances tool for data relating to workers' injuries or fatalities are hard to obtained. Furthermore, according Havold (2005) objectives accident data may not be exactly right since staffs is reticent to report accidents and an apparent accident-free period maybe due to suppressed accident reporting. The ACSNI Third Report (HSC, 1993) offers some guidance on this and says that there is no single measure of safety performances that is

unambiguous and wholly resistant to abuse. Measurement of safety performance was assessed by four items adapted from K-C. Shang et al. (2005). Respondents were asked to provide information related to their safety performances by means of their degree of agreement or disagreement with:

- a) the frequency of accidents is reducing
- b) the frequency of equipment failure is reducing
- c) the ambulance and department vehicle loss and damage are reducing
- d) the number of personal injuries is reducing.

The Cronbach-alpha of this item scale was 0.85.

Moreover, Safety Management were identified as an independent variable. AMOs and Nursing Sisters' safety management were assessed by means of three dimensions adapted from Bass and Avolio (1990), Cooper (1998), Carrillo and Simon (1999), O'Dea and Flin (2001), Yule (2003), and Wu et al. (2007). These three dimensions were SC, SP, and SM. Detailed of each dimension were explained as following:

SC. To measure the extent to which respondents perceived their AMOs and nurse' emphasized SCs at work, five items were used. These items were 'My AMOs and nurses stress the importance of wearing personal protective equipment', 'My AMOs and nurses express an interest in acting on safety policies', 'My AMOs and nurses are concerned about safety improvement', 'My AMOs and nurses coordinate with other departments to solve safety issues', and 'My AMOs and nurses show consideration for workers'. The Cronbach-alpha of this scale was 0.74.

SP. Four items were used to measure respondents' perceptions of AMOs and nurses' respect for SP. These items included 'My AMOs and nurses explain the safety mission clearly', 'My AMOs and nurses emphasized worksite safety', 'My AMOs and nurses have established a safety responsibility system', and 'My AMOs and nurses establish clear safety goals'. The Cronbach-alpha of this scale was 0.92.

SM. Three items, 'My AMOs and nurses reward those who set an example in safety behaviour', 'My AMOs and nurses praise workers' safety behaviour', and 'My AMOs and nurses have set up a safety incentive system', were used to measure workers' perceptions of AMOs and nurses' SM. The Cronbach-alpha of this scale was 0.90.

The detail of operational definition and measurement: Original and adapted versions of measuring tool:

Table 3.3  
*Item for Safety Performances (SP)*

<b>Code</b>	<b>Item</b>	<b>Adapted from</b>
SP1	The frequency of accidents is reducing.	Shang et al., (2011)
SP2	The frequency of equipment failure is reducing.	
SP3	Ambulance and department vehicle loss and damage is reducing.	
SP4	The number of personal injuries is reducing.	

Table 3.4  
*Item for Safety Concern at workplace (SC)*

<b>Code</b>	<b>Item</b>	<b>Adapted from</b>
B1	My AMOs and nurses stress the importance of wearing personal protective equipment.	Shang et al.,(2011)
B2	My AMOs and nurses express an interest in acting on safety policies.	
B3	My AMOs and nurses are concerned about safety improvement.	
B4	My AMOs and nurses coordinate with other departments to solve safety issues	
B5	My AMOs and nurses show consideration for workers.	

Table 3.5  
*Item for Safety Policy (SP)*

<b>Code</b>	<b>Item</b>	<b>Adapted from</b>
C1	My AMOs and nurses explained the safety mission clearly.	Shang et al., (2011)
C2	My AMOs and nurses emphasise worksite safety.	
C3	My AMOs and nurses have established a safety responsibility system	
C4	My AMOs and nurses establish clear safety goals.	

Table 3.6  
*Item for Safety Motivation (SM)*

<b>Code</b>	<b>Item</b>	<b>Adapted from</b>
D1	My AMOs and nurses reward those who set an example in safety behaviour	Shang et al., (2011)
D2	My AMOs and nurses praise workers' safety behaviours.	
D3	My AMOs and nurses have set up a safety incentive system.	

### 3.8 Questionnaire Design

The survey questionnaire consists of 4 pages attached together with a personal cover letter. The questionnaire was prepared in bilanguage English and Bahasa Melayu. During translation process English to Bahasa Melayu, two panel experts were assigned to review the translation. Both experts had been more than fifteen years experienced subject teaching English and Bahasa Melayu in secondary school.

The questionnaires were prepared in 4 pages with a total 30 questions be made up in the research instrument. Three (3) sections were developed as known in Appendix 1 – Questionnaires.

Section A - items of respondent's demographic profile. There have fourteen (14) items of demographic items that respondents need to answer such as gender, race, age, marital status, current position and information regarding employment.

Section B was independent variable which, safety management. Items had been divided to 3 dimensions which were safety concern, safety policy, safety motivation, there were consists of 12 items.

Section C focused on safety performances which was dependent variable with (4) items. Dual language, Malay and English version have used in the questionnaires survey to give an options and flexibility to the respondent in answering the surveys.

### 3.9 Pilot Test

In order to discover the reliability and validity of the instrument, a pilot test has to be done (Flynn, Sakakibara, Schroeder, & Bates, 1990). This is because the pilot test verifies and check if there is any error or limitation from the instrument. Furthermore, the acceptability of the instrument can be established through pilot test because the researcher can identify whether respondent understand the questions from the instrument. Moreover, the original scales were developed from other countries, so Malaysian respondents might respond the questionnaire differently, so the internal consistency, reliability and discriminant validity of the instrument can be ascertained through this pilot test.

In this study, pilot test was conducted by sending questionnaires to AMOs and Nursing Sisters who worked in Hospital Raja Permaisuri Bainun Ipoh Perak. Questionnaires were sent to 50 respondents, but only 42 responded and used for the study. Time taken to complete the questionnaires ranged from 15-30 minutes. Feedback from the respondents showed that most of them could understand the clarity of words with minimum changes needed. The reliability test was measured to ensure no bias (error free). Cronbach's Alpha is a reliability coefficient that will indicate the correlation between the variables (Sekaran & Bougie, 2013). The results of the reliability tests are presented in Table 3.7.

Table 3.7  
*Result of Pilot Test*

<b>Variables</b>	<b>No of items</b>	<b>Cronbach's Alpha</b>
<b>Safety management</b>	12	0.81
Safety concern	5	0.93
Safety policy	4	0.73
Safety motivation	3	0.76
<b>Safety performance</b>	4	0.79
<b>Overall item</b>	16	0.89

Based on Table 3.7 the results of the reliability test, it is indicated that all the values of the Cronbach's Alpha for both the dependent and independent variables were all more than 0.7. Therefore, it can be concluded that all items for all the variables in this study are reliable and have a good value.

Table 3.7 above presented the Cronbach' Alpha value for pilot test reliability analysis. The highest Cronbach's Alpha value was 0.93 and the lowest 0.73. According to (Hair, Jr, 2015) if Cronbach's Alpha value exceeded 0.7 the instruments were considered acceptable and can proceed for further analysis. Thus, the pilot test result showed that the instruments which has been developed in this study are accepted.

### **3.10 Data Collection Procedure**

Prior to collection of data from AMOs and Nursing Sisters, a letter of authorization and to whom it may concern for the purpose of data collection was obtained from the Othman Yeop Abdullah Graduate School of Business (OYAGSB) requesting for their kind cooperation and assistance in data collection. Followed by approval from the Hospital Director was gained before distributing the questionnaire. The questionnaire were distributed in November 2019. The respondents were given assurance that their

responses will be kept confidential, in order to encourage participation from respondents. The distribution of the questionnaires was done with the help of Chief AMO and Head of Nursing of the Hospital Raja Permaisuri Bainun due to the different types of shifts their work which are morning shift, afternoon shift and night shift. So it is difficult to meet all the AMOs and Nursing Sisters at the same time of the day. Besides that, the schedule of off days for the employees vary among each other. The respondents were not allowed to answer the questionnaire more than once. Due to the differences in the work schedule, this has posed restriction for the collection of questionnaires, and it took about two months for data collection period. Out of the 250 questionnaires that were given, only 223 has responded. The response rate was 89.2%.

### **3.11 Technique of Data Analysis**

The response rate, demographic profiles of respondents' frequency statistics, reliability analysis, descriptive analysis, Pearson correlation analysis and multiple regression analysis were performed using the Statistical Package for Social Science (SPSS) for Windows version 23 software.

### **3.12 Descriptive Analysis**

Descriptive analysis is one the technique used to summarize huge data from targeted respondents or sample (Hair et al., 2006). According to Coakes and Steed (2007), descriptive analysis is used to explore, summarize and describe data collection acquired from a survey. Demographics data from a sample can be described using descriptive analysis. For variables such as working experiences and age, mean, standard deviation, minimum and maximum values can be used to describe data. For

variables such as gender, race, types of employment, marital status, frequency analysis can be used to describe data. The frequency percentage of the samples can also be obtained. However, this analysis only provides details about respondents and unable to draw any conclusions from the sample.

### **3.13 Inferential Analysis**

According to Hair, Black, Babin, Anderson and Thattham (2006), inferential analysis is the most suitable way to explain hypothesis. Examples of inferential analysis that will be discussed below are reliability test, correlation and regression analysis.

#### **3.13.1 Reliability Test**

According to Zikmund (2003), reliability is the degree to which measures are error free, so consistent and similar results can be acquired. Schindler and Cooper (2003) had defined reliability as representing internal consistency in which the homogeneity of an item in the measure is demonstrated. Reliability is an indicator of a measure's internal consistency.

Consistency shows how well the items measuring a concept hang together as a set. A measure is reliable when different attempts at quantifying something gives the same result (Zikmund, 2003). The reliability analysis is done using Cronbach's Alpha. The acceptable Cronbach's Alpha coefficient should be more than 0.7 (Nunally, 1978). The reliability is higher if the Cronbach's Alpha is closer to 1.0.

### 3.13.2 Correlation Analysis

According to Coakes and Steed (2007), Pearson correlation is used to test the relationship between dependent and independent variable. In this study, the researcher will identify the strength and direction of relationship between independent variables (Safety Concern, Safety Policy and Safety Motivation) with dependent variable which is safety performance among AMOs and Nursing Sisters in HRPB. Positive or negative correlation can be identified by measuring the strength. Interpretation of correlation coefficient can be done by identifying the coefficient and its associated significance value (p) (Coakes & Steed, 2007). For two quantitative variables, X and Y, a positive correlation is indicated when a higher value of X is associated with a higher value of Y, whereas if a high value of X is linked with low value of Y, a negative correlation occurs. In other words, if the result showed +1.0, interpretation indicate the value as perfect positive correlation meanwhile, if result -1.0 indicates the value as perfect negative correlation (Gliner Morgan & Leech, 2009). The closer the value of the coefficient is to 1.0, the stronger the correlation between the two variables. For significance value (p), the acceptable value is either 0.01 or 0.05 (Coakes & Steed, 2007). Table 3.8 shows the strength of relationship as suggested by Davis's Scale Model.

Table 3.8  
*Strength of relationship as suggested by Davis's Scale Model.*

Very weak	Weak	Moderate	Strong	Very strong
0 – 0.20	0.30 – 0.40	0.40 -0.60	0.60 -0.80	0.90 -1.00

Source: Salkind, 2009

### **3.13.3 Multiple Regression Analysis**

Since this research has identified three independent variables and one dependent variable, multiple regression analysis is the most suitable statistics techniques to analyze the relationship between them. According to Hair et al. (2010), multiple regression is used to predict the changes in the dependent variable in response to changes in the independent variables. In other words, the researcher wants to identify which independent variables have most influence factor on dependent variable (Sekaran & Bougie, 2013). Once a multiple regression equation has been constructed, the researcher can check how good it is (in terms of predictive ability) by examining the coefficient of determination, R-square (R<sup>2</sup>). The value of R<sup>2</sup> is between 0 and 1. Bhatti et al. (2012) has stated that the higher the R<sup>2</sup> value (variance) the better the model and its prediction. In this study, three hypotheses were generated, and to decide whether the hypotheses is rejected or not, the coefficient table at the column Sig. will produce the p-value. The hypotheses are accepted if p is < 0.05, otherwise the hypotheses will be rejected.

### **3.14 Chapter Summary**

In this chapter, the researcher has highlighted all the methodology that has been used to complete this study. Data analysis and pilot test result has been interpreted. This chapter also features the simple random method that applied. Research findings resulting from the application of simple random sampling can be generalized due to representativeness of this sampling technique and a little relevance of bias.

It explains on the research framework, the instrument used, population and samples involved, pilot study and the method of analyses for the collected data. The next chapter will discuss further interpretation finding of the data analysis.



## CHAPTER 4

### RESEARCH ANALYSIS AND FINDINGS

#### 4.1 Introduction

This chapter discussed results of the study. It begins by reporting the response rate, demographic characteristics of the respondents and preliminary data analysis. The discussions continue with a report on correlation analysis and regression analysis. The chapter ends with a discussion on summaries of hypothesis testing and conclusion.

#### 4.2 Rate of response

During data collection process, 250 questionnaires were distributed to Assistant Medical Officers and Nursing Sisters HRPB who in Grade 32 and above (referred to figure 4.1). Out of 250 questionnaires only 223 were returned, however eight of questionnaires were incomplete. Thus, the complete questionnaires were 215, which fulfill the Krenjcie and Morgan table for sample (minimum sample for this population for this study 215). Furthermore, the respond rate for this study was 86 %. The discussion above is depicted in the table 4.1 below.

Table 4.1  
*Respond rate of the study (n=215)*

Items	Total	Percentage (%)
Distributed Questionnaires	250	100
Collected Questionnaires	223	89.2
Incomplete Questionnaires	8	3.2

### **4.3 Demography Background of Respondent**

#### **4.3.1 Gender Respondent**

The demographic data were analyzed using descriptive analysis and result was tabled as in Table 4.2. Gender aspect, female respondent is higher 74.9 % compared to male 25.1 % from the total respondent.

#### **4.3.2 Respondent Age Group**

In the aspect of age group, about 28.4 % of the respondents were aged between 25-35 years old, aged 36-45 years old is 61.9 % whereas 9.8 % aged more than 45 years old. Table 4.2 shown the highest respondent are from the aged group of 36-45 years old. This aged group of AMOs and Nursing Sisters are experienced in their work.



Table 4.2  
*Background of Respondent (n=215)*

<b>Variables</b>	<b>Classification</b>	<b>Frequency (n=215)</b>	<b>Percent (%)</b>
Gender	Male	54	25.1
	Female	161	74.9
Age	25 - 35	61	28.4
	36 - 45	133	61.9
	> 45	21	9.8
Race	Malay	168	78.1
	Chinese	5	2.3
	Indian	38	13.7
	Others	4	1.9
Education	MCE/SPM	14	6.5
	Diploma/Adv. Diploma	174	80.9
	HSC/STPM/STAM CERT.	2	0.9
	Degree	21	9.8
	Master	4	1.9
Marital status	Single	27	12.6
	Married	181	84.2
	Divorced/widowed	7	3.3
Years of service	6 - 10 years	80	37.2
	> 10 years	135	62.8
Workplace	Dept of Surgery	88	40.9
	Dept of Internal Medicine	15	7
	Emergency & Trauma Dept	22	10.2
	Dept of Paediatric	5	2.3
	Dept of Forensic	1	0.5
	Dept of Anaesthesiology	9	4.2
	Others	75	34.9

Table 4.2 (Continued)

Variables	Classification	Frequency (n=215)	Percent (%)
Job Designation	AMO U32	71	33.0
	AMO U36	21	9.8
	AMO U41	10	4.7
	Nurses U32	81	37.7
	Nurses U36	32	14.9
Involved in a needle stick accident in 2018	None	190	88.4
	1-3 times	15	7.0
	4 -6 times	6	2.8
	>6 times	4	1.9
Involved in other accidents at workplace	None	207	96.3
	1-3 times	8	3.7
	4 -6 times	0	0
	>6 times	0	0
Nearly involved in a workplace accident	None	188	87.4
	1-3 times	26	12.1
	4 -6 times	1	0.5
Attended courses related to workplace safety	None	153	71.2
	1-3 times	60	27.9
	4 -6 times	1	0.5
	> 6 times	1	0.5
Worked on shift work	Yes	70	32.6
	None	145	67.4
Hours of worked overtime in a week	None	158	73.5
	≤ 16 hours	57	26.5

#### 4.3.3 Race of respondents

Describing about the race category, Malays respondents were (78.1 %) and Indian contributed 17.7% of the respondents. Whereas Chinese is 2.3 % followed by 1.9 % for others category of races as stated in table 4.2.

#### **4.3.4 Level of Education**

This study, the respondents were Assistant Medical Officer (AMO) and Nursing Sisters in grade 32 and above who worked in Hospital Raja Permaisuri Bainun (HRPB) Ipoh. Their minimum level of education is Diploma in related field. The highest percentage of the respondents had a diploma or advanced diploma (80.9 %), followed by Bachelor Degree 9.8 %. SPM holders were 6.5 % followed by HSC/STPM holders which are 0.9 % of them whereas for Master's Degree were 1.9 % only.

#### **4.3.5 Marital Status**

Marital status of the respondents, researcher found 12.6 % single followed by 84.2 % are married. Whereas 3.3 % of respondents are divorced or widowed participated in this research. Researcher found the highest respondent are married.

#### **4.3.6 Working Experience**

Analysis on respondents working experiences, found 36.7 % AMO and nurses with working experienced 6-10 years and 63.3% are more than 10 years working experienced. This is indicated that majority of respondents in this research were an experienced AMOs and Nursing Sisters.

#### **4.4 Reliability Analysis**

Reliability analysis is an important tool to measure whether the instrument used is reliable and admissible. In this test, Cronbach's Alpha value is used to determine the reliability of the instrument (Hair et al., 2010). The acceptable alpha coefficient should be more than 0.7 (Nunally, 1978). Table 4.3 shows the Cronbach's Alpha

value with comparison of original, pilot and current studies for independent variables and dependent variables.

Table 4.3  
*Reliability measures: Comparison of pilot and current studies for independent variables and dependent variables (n=215)*

Variables	N of Items	Coefficient Alpha	
		Pilot Study	Current Study
<b>Safety Management</b>	12	0.81	0.79
<i>Safety concern</i>	5	0.93	0.74
<i>Safety policies</i>	4	0.73	0.92
<i>Safety motivation</i>	3	0.76	0.90
<b>Safety Performance</b>	4	0.79	0.85
All items	16	0.89	0.92

Row data was subjected to reliability test for getting the value of Cronbach's Alpha. Table 4.3 depicted the result of reliability test. The highest value of Cronbach's Alpha was 0.92 and the lowest was 0.74. Since the value is more than 0.7, the items in this instrument were reliable. Hair et al., (2010) stated that Cronbach's Alpha value exceed 0.7 the questionnaire items are good and acceptable. Thus, it can be concluded that both dependent and independent variables for the current study are reliable and could be applied for the analysis.

#### 4.5 Preliminary Data Analysis

The aims of preliminary data analysis are to review the data to prepare it for further analysis, describe the key features of the data, and summarize the results. This section performs four types of data screening which normality, linearity and multicollinearity test.

#### 4.5.1 Normality test

Normality is used to describe a curve that is symmetrical and bell-shaped. Normality test is done to examine whether the data is normally distributed or not (Hair et al., 2003). According to Hair et al. (1998), all the data is normally distributed when the value for Skewness and Kurtosis are within the range -0.98 to +1.98. Skewness assesses the extent to which a variable's distribution is symmetrical (Hair et al., 2017). Kurtosis refers to the "peakedness" or "flatness" of the distribution compared with the normal distribution. (Hair et al., 2017).

Raw data was subjected for normality test to find out the value of Skewness and Kurtosis. The result of this analysis was show in Table 4.4. According to Hair et al., (2017) the acceptable level of Kurtosis is between 2.00 and +2.00. Table 4.4 showed the details of value kurtosis skewness this study data. All values skewness and kurtosis within the range acceptable values. Thus, it indicates the data in this study was normal distribution.

Table 4.4  
*Statistic value of Skewness and Kurtosis (n=215)*

Variables	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Mean Safety Concern	215	-.771	.166	1.382	.330
Mean Safety Policy	215	-.797	.166	1.110	.330
Mean Safety Motivation	215	-.631	.166	.656	.330
DV Mean Safety Performance	215	-.416	.166	1.359	.330
Valid N (listwise)	215				

In addition, normality is used to describe a curve that is symmetrical and bell-shaped. Norusis (1995) describes a simple method for examine the normality of the data is to look at the histograms diagram for residual. According to Norusis (1995), the normal distribution can be seen from the histogram diagram vertical lines. Based on the analysis conducted the data was normally distributed.

#### 4.5.2 Linearity analysis

According Pallant (2007), linearity assumption examines the link between the residual and the predicted values. There is no clear interpretation on the relationship between the residuals and predicted values, linearity assumption has been encountered. The assumption from the previous studies that majority of the scores should be in the center at zero point (Flury & Riedwyl, 1998). Hence, a study by Hair et al. (2006) on linear models, the prediction of the values fall on a straight line with a constant unit change (slope) by the dependent variable for a unit change in the independent variable is constant. The residual should have a straight-line connection with predicted dependent constructs scores in which figure 4.2. In this study the linearity analysis

was applied by Hair et al. (2006) model. The result of analysis was below in figure 4.1.

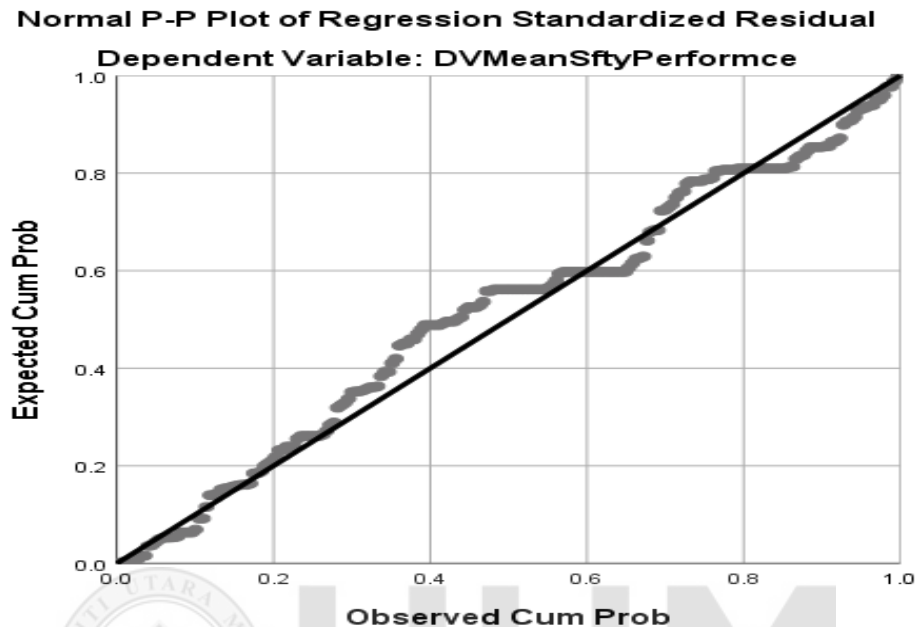


Figure 4.1  
*Linearity analysis*

### 4.5.3 Multicollinearity

According to Black (2010), multicollinearity is when two or more of the independent variables of a multiple regression model are highly correlated. In other words, some of the predictor variables are correlated among themselves. Multicollinearity is a problem that affects many regression models. Presence of multicollinearity in the data can be assess by the tolerance value and variable inflation factor value (Pallant, 2005). Tolerance is a value that measures the degree of the independent variable's variability that is not described by the other independent in the model. It is calculated by using the formula  $1-R^2$  for each variable. Whereas variance inflation factor (VIF) is the inverse of tolerance and is counted by inverting the tolerance value (1 divided by tolerance). According to Hair et al. (2010), if the value of tolerance is less than 0.1

and VIF value is 10 and above, then the multicollinearity is problematic. Based on Table 4.5, all the tolerance values are more than 0.1, and VIF values are less than 10, so it can be concluded that multicollinearity does not exist in this study.

Table 4.5  
*Multicollinearity Analysis Coefficients (n=215)*

<b>Model</b>	<b>Collinearity Statistics</b>	
	<b>Tolerance</b>	<b>VIF</b>
meanBSC	.342	2.922
meanCSP	.143	7.003
meanDSM	.179	5.580

Dependent Variable: mean Safety Performance

#### 4.6 Descriptive Analysis of Variables

Descriptive statistics is an important tool to summarize a collection of data. Different types of descriptive analysis such as mean, median, standard deviation, percentage and frequency. Result of descriptive analysis of variables was explained in Table 4.6.

Table 4.6  
*Mean and Standard Deviation Analysis*

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>
<b>Safety management</b>	3.9816	.56150
Safety Concern	3.7684	.51392
Safety Policy	4.1453	.63722
Safety Motivation	4.1163	.68542
<b>Safety Performance</b>	3.8016	.50339

The measurement of central tendency (mean) and dispersion (standard deviation) of a data can be determined using descriptive statistics. According to sosiologyuide.com, mean is defined as the means of absolute deviation of values from some average while standard deviation referred to as sigma that is important and widely used to measure of dispersion. The highest mean is safety policy (mean = 4.1453) and the lowest mean is safety concern (3.7684). Table 4.6 indicated the mean and standard for all variables and mean score are high.

#### 4.7 Correlation Analysis

Correlation analysis is used to measure the linear relationship between independent variables and the dependent variable (Sekaran, 2003). The result of Pearson's correlations analysis is presented in Table 4.7 which shows the correlation and significance value between dependent and independent variables.

Table 4.7  
*Correlation between independent variables and the dependent variable*

Variables	SC	SP	SM	SP
<b>1. Safety Concern</b>	1			
<b>2. Safety Policy</b>	.810**	1		
<b>3. Safety Motivation</b>	.753**	.905*	1	
<b>4. Safety Performance</b>	.242**	.275**	.247**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed)

Based on the result from Table 4.7, the correlation between safety performance as a dependent variable were significant relationship towards safety concern at .001 level ( $r=.917$  and  $p=.000$ ;  $p<0.01$ ). Since the value of coefficient correlation has a positive sign, it can be concluded that there is positive high relationship between safety performance and safety concern.

Meanwhile the result of the analysis the correlation between safety performance as the dependent variable was significant towards safety policy at .001 level ( $r = .964$  and  $p= .000$ ;  $p<0.01$ ). Since the value of coefficient correlation has a positive sign, it can be concluded that there is positive high relationship between safety performance and safety policy.

Furthermore, the result of the analysis the correlation between safety performance as the dependent variable was significant towards safety motivation at .001 level ( $r = .935$  and  $p= .000$ ;  $p<0.01$ ). Since the value of coefficient correlation has a positive sign, it can be concluded that there is positive high relationship between safety performance and safety motivation.

Based on the result from Table 4.7, the correlation between safety management as the independent variable was significant towards dependent variable, safety performance at .001 level ( $r = .272$  and  $p= .000$ ;  $p<0.01$ ). Since the value of coefficient correlation has a positive sign, it can be concluded that there is positive high relationship between safety management and safety performance.

#### 4.8 Regression Analysis

Multiple regression is a procedure to analyze how independent variables predict the values of dependent variable (Zikmund, 2003). In this study, regression analysis is conducted to identify further influence between independent variables safety management (safety concern, safety policy, safety motivation) towards dependent variable safety performance. Raw data was subjected towards multiple regression analysis. The following Table 4.8 depicted and presents the influence of safety concern, safety policy and safety motivation towards safety performance.

Table 4.8  
*Multiple Regression Analysis between variables (n=215)*

Independent Variable (Safety Management)	Dependent Variable (Safety Performance)		
	Beta	t	Sig.
Safety Concern	-0.019	-0.178	.859
Safety Policy	0.414	2.552	.011
Safety Motivation	0.061	0.424	.672
$r^2 = 0.207$ $F = 18.382$ Sig. $F = .000$			

Note:  $P < 0.05^*$

Table 4.8 shown the value of  $r^2$  was 0.207. This means that 20.7% of safety performance in this study was explained by safety management. Furthermore 79.3 % were explained by other factors which not included in this study. In other words, the regression model sufficiently fits the data and the overall regression model is significant (Sig. F change = 0.000,  $r^2 = 0.207$ ,  $p < 0.05$ ).

By referring to the standardized beta coefficient value, the researcher is interested to identify the most contributing factor towards safety performance. Its shows that the highest beta coefficient value and t value were safety policy ( $\beta = 0.414$ ,  $t=2.552$ ), is

one of the safety management dimensions.

#### **4.9 The result of the hypothesis testing.**

The multiple regression analysis determines either the hypotheses are rejected or supported in the study. The following Table 4.9 showed all the hypotheses are supported.

Table 4.9  
*Hypothesis Summary*

<b>No.</b>	<b>Hypotheses</b>	<b>Outcome</b>
1	The Assistant Medical Officers and Nursing Sisters' Safety Concern is positively related towards safety performance of Hospital Raja Permaisuri Bainun Ipoh	Supported
2	The positive high relationship between safety policy and safety performance in Hospital Raja Permaisuri Bainun Ipoh Perak	Supported
3	Safety motivation of AMOs and Nursing Sisters are positively related to safety performance in Hospital Raja Permaisuri Bainun Ipoh	Supported

All hypothesis were supported which are safety concern, safety policy and safety motivation.

#### **4.10 Summary of the Chapter**

This chapter described the demographic characteristics of the 215 participants, the results of the correlation, and regression analyses. All the hypotheses were supported in this study. The justification on the findings and the recommendation of this study were discussed in the following chapter.

## CHAPTER 5

### DISCUSSION AND RECOMMENDATIONS

#### 5.1 Introduction

In this final part of the research, the researcher designs a discussion based on the three area objectives set out in Chapter One. The findings and recommendations also discussed in depth in this chapter. Besides, this chapter stated the implications and recommendations for future research.

#### 5.2. Recapitulation of Result

This research aims to investigate the relationship between safety management its dimensions which are safety concern, safety policy and safety motivation towards safety performance among the Assistant Medical Officers and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh Perak. Specifically, the objectives of this study (i) to examine the level of safety performance among the AMOs and Nursing Sisters in HRPB (ii) To examine the level of safety management among the AMOs and Nursing Sisters (iii) To identify the relationships safety management includes its dimensions safety concern, safety policy and safety motivation towards safety performance. This research conducted because a few researches on safety management and safety performance found among the healthcare workers in public hospital and discover the gaps in occupational safety and health at the public hospital. This research using cross-section, quantitative method and questionnaire as a medium for data collection. In this study, the probability sampling method is selected. The method used is simple random sampling. Simple random sampling is a sampling

procedure that allows individual in the defined population to have an equal and independent chance of being included in the sample (Zikmund, 2003). All the three independent variables which are safety concern, safety policy and safety motivations were found significantly correlated with safety performances. Safety policy is the highest significant correlated with safety performances.

### **5.3 Discussion of the Finding**

In the following discussion, each objectives of the study justifying the results founded and compared with the previous literature results.

#### **5.3.1 Research Objective No.1**

ROI: To identify the level of safety management among Assistant Medical Officers and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh.

The analysis for this study were discussed and result shown that the mean for the compute safety management is high (3.98) which consist safety concern (SC) was 3.77, safety policy (SP) 4.14 and motivation (SM) 4.11. These values showed that majority of AMOs and Nursing Sisters were concerned about their safety management while performing their job in Hospital Raja Permaisuri Bainun Ipoh.

Result of this study were consistent with research conducted by Cheng et al., (2012) in the construction organization safety management are important to construction projects and related to project performance. An empirical study was undertaken in Hong Kong in order to shed more light on this topic. In the study, 232 respondents, safety management process was perceived by the construction practitioners as being

the most important, followed by safety management information and committees. (Cheng et al., 2012)

Similar to this study senior managers' safety management and supervisors' safety management are valuable sources for safety performance. Their found senior managers' safety management has a positive association with supervisors' safety management and safety performance. Logically senior managers' play an important part in long-term safety success and essentially SC, SP, and SM and influenced organizational members to excel in safety performance. These findings are consistent with those reported in prior studies (Flin et al., 2000; Flin, 2003; Flin and Yule, 2004; FSC, 2006; Hofmann et al., 1995; HSE, 2003).

The researchers concluded that safety management were able of providing excellent safety performance in organizations through regular safety meeting, incident and accident investigations, accident reporting systems, and surveys in the organization itself.

The high mean of safety policy among Assistant Medical Officers and Nursing Sisters in because HRPB organization's safety policy is a recognized, written statement of its occupational safety and health policy to protect the health and safety of their employees as well as the patients and visitors. New employees or new patients as well as visitors came to HRPB were given briefing is to guide and direct all employees to work safely and prevent injury to themselves and others on safety. This briefing is compulsory for all new comers to HRPB. This is consistent with the study by Teo et al. (2005) a positive reinforcement included benefits, prerogatives, and safety

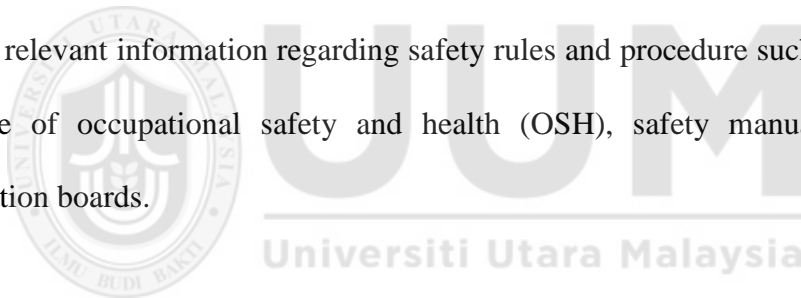
campaign activities among workers. Besides that, negative reinforcement added the penalty to be imposed if their failed to carry out their work in a safe manner.

### **5.3.2 Research Objective No.2**

RO2: To recognize the level of safety performance among Assistant Medical Officers and Nursing Sisters in public hospital in Perak.

In this study, the result revealed the mean of safety performance the mean value is 3.80. In comparison, the study conducted by Vinodkumar and Bhasi (2010) has a mean value of 3.84 regarding employee's commitment toward safety. In this study, safety performance among AMOs and Nursing Sisters was lower than the findings in Vinodkumar and Bhasi (2010). However, from the result, it was enhanced the researcher's understanding that AMOs and Nursing Sisters still unsure the concept of safety in hospital due to majority of the AMOs and Nursing Sisters either newly transfer in from other hospitals or newly appointed as a AMOs and Nursing Sisters. This means that AMOs and Nursing Sisters are considered those were actively seeking knowledge through the learning process and trying to adapt the safety culture in the public hospitals. Thus, continuous briefings now and then are an important and encourage to communicate about safety-related matters or any incidents to their superiors effectively. This factor indirectly will increase AMOs and Nursing Sisters safety commitment at the public hospitals. All the AMOs and Nursing Sisters who involved should aware in any occupational safety and health activities and participate the programme.

The mean of the Compute Safety Policy (SP) is 4.14, in scales from one to five. Safety Policy were one of the first steps to encourage AMOs and Nursing Sisters to comply with standards and legal requirements. The implementation of Safety Policy will influence the awareness of safety. These findings were supported by Farouk, Richardson, and Santhapparaj (2011); Lu and Yang (2011) and Vinodkumar and Bhasi (2010). These findings have been consistent with the findings of Cheyne and Cox, (2000) and Mearns et al. (2003) both researchers have discovered that comprehensive and effective Safety Policy will efficiently prevent accidents and reduce accident rates. These researchers have shown that the capacity and level of communication has an impact on the safety performance of the organization. The high mean value of Safety Policy due to the common practice of HRPB that they always provide relevant information regarding safety rules and procedure such as posters and brochure of occupational safety and health (OSH), safety manuals, and safety information boards.



The mean for compute safety motivation (SM) is 4.12. Safety motivation towards the safety environment at the workplace, especially in performing procedures on patients reflects the management effort to ensure the workplace is safe and healthy for the usage of the HCWs. This finding is significantly supported by the research of Vinodkumar et al. (2010), as an essential safety management that predict safety knowledge, safety motivation, safety compliance, and safety participation. Management commitment to safety and health-related issues is an important component of safety management to ensure a safe working environment for the employees. Although the study conducted by Vinodkumar et al. (2010) focused primarily on management commitment in the organization of chemical industries, this

study found that management commitment responsibility is similar to the area of public university.

The mean value is high because of the management AMOs and Nursing Sisters in the hospital organize various activities of safety and health programs to create safety awareness among the healthcare workers especially who involved directly to managing of patients in public hospital. This will reflect vital issues in the importance of safety policy to develop safety environment in the workplace. Besides that; the management also supports the OSH programs and activities such as yearly ward inspection, annual workplace ventilation inspection, safety and health training and certification as one of the management efforts to commit on safety and health issues.

Other than that, it is in line with the study by Cheyne and Cox (2000) in offshore industries identified that management commitment plays essential roles to lead to the priority in safety issue in the offshore industries organization. The results give some indications of how those working environments can perceive safety culture. A study conducted by O'Toole (2002) found that the importance of the roles of the manager, which is the manager should be responsible for the health and safety of their employee's safety in the organization. Hence, management of AMOs and Nursing Sisters should identify the risk and hazards in the workplace or organization and allocate the resources to ensure the safety of their employees and to ensure the lowest possible number and severity of injuries experienced by employees.

### 5.3.3 Research Objective No.3

RO3: To examine the relationship between safety management and safety performance among Assistant Medical Officers and Nursing Sisters at public hospital in Perak.

By referring to the standardized beta coefficient value, it shows that the highest beta coefficient value is safety policy, this indicated that is the most significant variable that predicts safety performance among AMOs and Nursing Sisters in Hospital Raja Permaisuri Bainun Ipoh Perak. This finding showed that the AMOs and Nursing Sisters attend the briefing of safety policy in every orientation session organized by Hospital Raja Permaisuri Bainun Ipoh to comply with safety policy in Hospital Raja Permaisuri Bainun. The higher-level management of Hospital Raja Permaisuri Bainun are always encourage AMOs and Nursing Sisters to participate in all occupational safety and health (OSH) programme and safety awareness activities provided by Hospital Raja Permaisuri Bainun or other relevant agencies.

The safety motivation shows the second most significant variable that predicts safety performance among AMOs and Nursing Sisters by implementing occupational safety and health (OSH) in the ward or clinics in the Hospital Raja Permaisuri Bainun. These include of providing allocation for fund to provide safety training for staff and the students in the area of ward and clinics and proactive in any safety and health activity conducted by Hospital Raja Permaisuri Bainun, State Health Director Office or other agencies. Other than that, Hospital Raja Permaisuri Bainun top management willing to commit and received suggestion from the staff regarding the improvement of occupational safety and health in the area where their work. There are also few

programmes conducted by Hospital Raja Permaisuri Bainun or State Health Director Office which are safety awareness week, safety talk corner and others.

Safety concern were very weakly influence towards safety performance. The significant level was weak because of disregarding or safety concern leading to accident or injury in the hospital. Many of healthcare staffs and professional are new and not familiar with the hospital environment. A few of them not aware the importance of safety concern in the hospital. Thus, these factors tend to make them performed unsafe behavior.

#### **5.4 Implications**

The discussion focused on the findings and implications to the body of knowledge and practicality aspect when performing their work. Review of occupational safety and health in Hospital Raja Permaisuri Bainun were based on their findings and discussions that have been conducted. There are few similar studies on safety performance among AMOs and Nursing Sisters conducted by other agencies. Thus, the study benefits the researcher to contributes the value of knowledge in improving safety management especially among health care workers where there was the last study that been conducted. Furthermore, this study provides the basis for further research on safety management among staff in public hospitals.

The findings of this study practically show a significant relationship between safety concern, safety policy and safety motivation towards safety performance among HCWs in one of the public hospitals in Ipoh Perak. This study not only contributes to the theoretical studies but also provides extensive benefits and exploration of the

practical contribution to the safety management of public hospital. Practically, the management of the public hospital should prioritize staff commitment in shaping the safety training among HCWs as this study found that safety training contributes most to the formation of safety performance. However, the study did not take into account the differences in HCWs sample at the public hospitals.

Findings of this study will be useful for the particular hospital management to understand and enhance the safety concern, safety policy and safety motivation in order to improve the safety performance AMOs and nursing sisters in the public hospitals. This study could provide a baseline study for hospital to manage the gap on safety concern, safety policy and safety motivation in order to improve safety performance among AMOs and nursing sisters. For example, hospital management could appoint AMOs and nursing sisters to be member of safety committee which represent their profession which they will have responsibilities in maintaining a safe working environment while they are doing their work. The hospital management should involve AMOs and nursing sisters in occupational safety and health committee, safety inspections, incident investigation assessing job hazards and risk assessment, safety and health meeting, and other safety related issues. By doing that, they will have a sense of belongings and it will motivate them to ensure an injury-free environment.

## **5.5 Recommendation for Future Studies**

This study focused to study the relationship of safety concern, safety policy and safety motivation towards safety performance among AMOs and nursing sisters in one of the public hospitals in Malaysia. This study provides empirical evidence and initial

exploration for future studies. From the findings, the independent variables only contribute 20.7% to the safety performance, hence for the future studies can benefit this study to expand the research framework by comprising other variables such as safety commitment, management commitment, safety training and safety rules procedures.

This research only study in one of the public hospitals in Ipoh Perak Malaysia, limited generalization can be made by this research. Therefore, the future studies should involve other public hospitals. Besides that, future studies can also systematically compare the relationship differences of between safety concern, safety policy and safety motivation and safety performance between private hospitals and public hospitals. This research utilizes only quantitative and cross-sectional research design and involve hypothesis testing to study relationship of safety concern, safety policy and safety motivation towards safety performance. Therefore, the future studies can be expanding to include the observation approach to study safety performance among other categories of healthcare workers.

## **5.6 Conclusion**

This study reviews the relationship of safety concern, safety policy and safety motivation towards safety performance among Assistant Medical Officers and Nursing Sisters in public hospital in Perak, Malaysia. The findings acknowledge that safety concern, safety policy and safety motivation were significantly influenced the safety performance. This finding is believed to provides the public hospitals management benchmarking for reviews on safety concern, safety policy and safety motivation that been applied for past years. There were areas that requires

improvement to provide safe and healthy environment for the healthcare workers to work.



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## APPENDICES



### OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS UNIVERSITI UTARA MALAYSIA

Dear Sir/Madam

It is great pleasure to inform you that I currently conducting a research project titled “Effect of Safety Management on Perceived Safety Performance at Public Hospital in Perak”. This research is the fulfillment of the requirement for Master of Sciences (Occupational Safety and Health Management), Universiti Utara Malaysia. Therefore, I would appreciate if you could spare 15 minutes of your valuable time to complete the questionnaire. All information will be kept strictly confidential and will be used for academic purposes.

Your response will be greatly appreciated. Please do not hesitate to contact me, if you have any queries about this research. Your cooperation and support in completing this survey are highly appreciated.

Yours sincerely,

.....  
**ABDUL AZIZ BIN MOHD NOR**

Master of Science (Occupational Safety and Health Management)  
Othman Yeop Abdullah Graduate School of Business  
Universiti Utara Malaysia

## QUESTIONNAIRES

Sila berikan jawapan/pandangan anda yang paling tepat terhadap setiap soalan. Makluman yang diberikan akan dipastikan sebagai “sulit” (untuk tujuan akademik) dan identiti anda akan dikekalkan sebagai rahsia.

### Seksyen A:

Sila tanda (✓) pada ruangan yang sesuai atau isi pada tempat kosong, yang mana bersesuaian.

1. Jantina anda (*Your gender*):  
 Lelaki (*Male*)  Perempuan (*Female*)
2. Taraf perkahwinan anda (*Your marital status*):  
 Bujang (*Single*)  Berkahwin (*Married*)  Bercerai/Balu (*Divorced/widowed*)
3. Tahap pendidikan tertinggi anda (*Your highest educational level*):  
 MCE/SPM  Ijazah (*Degree*).....  
 Diploma/ Diploma Lanjutan  Sarjana (Master degree).....  
 HSC/STPM/STAM SIJIL  Doktor Falsafah (PhD).....  
 Diploma/ Diploma Lanjutan
4. Bangsa (*Race*):  
 Melayu (*Malay*)  Cina (*Chinese*)  India (*Indian*)  Lain-lain, sila nyatakan (*Others, please specify*):
5. Umur anda (*Age*)  
 < 25 years old  36- 45 years old  25- 35 years old  > 45 years old
6. Berapa lamakah anda berkhidmat (*How long have you been working*) ?  
 < 1 years  1-5 years  6-10 years  >10 years
7. Di jabatan/unit manakah anda bekerja sekarang ?  
( *Which department/unit you work for* ? )  
 Jabatan Pembedahan (Surgery)  
 Jabatan Perubatan (Internal Medicine)  
 Jabatan Kecemasan & Trauma (Emergency & Trauma Department)  
 Jabatan Pediatrik (Paediatrics Department)  
 Jabatan Forensik (Forensic Department)  
 Jabatan Anaesthesiologi (*Anaesthesiology department*)  
 Lain-lain – sila nyatakan (*Others – please specify*) .....
8. Jawatan Pekerjaan dan gred anda (*Job Designation and grade*)  
 Penolong Pegawai Perubatan (*Assistant Medical Officer*) : grade .....  
 Jururawat (*Nurse*) : grade .....  
 Jurupulih Perubatan Carakerja (*Occupational Therapy*) : grade .....  
 Fisioterapi (*Physiotherapy*) : grade .....  
 Juruteknologi Makmal (*Medical Lab Technologist*) : grade .....

- Lain-lain, sila nyatakan (*Others, please specify*): .....
9. Berapa kalikah anda terlibat dalam kemalangan tercucuk jarum/benda tajam pada 2018?  
(*How many times were you involved in a needle stick accident in 2018?*)  
 None     1-3 times     4 -6 times     >6 times
10. Berapa kalikah anda pernah terlibat dalam kemalangan-kemalangan lain di tempat kerja.  
(*How many times were you involved in other workplace accidents*)  
 None     1-3 times     4 -6 times     >6 times
11. Berapa kalikah anda hampir mengalami kemalangan di tempat kerja?  
(*How many times were you nearly involved in a workplace accident*)  
 None     1-3 times     4 -6 times     >6 times
12. Berapa kalikah anda pernah menghadiri kursus berkaitan keselamatan di tempat kerja .  
(*How many times were you attended courses related to workplace safety*)  
 None     1-3 times     4 -6 times     >6 times
13. Adakah anda bekerja mengikut shif? (*Are you on shift work?*)  
 Ya/Yes     No/Tidak
14. Berapa jam anda bekerja lebih masa dalam masa seminggu?  
(*How many hours do you work overtime in a week?*)  
 none      $\leq 16$  hours     17 – 24 hours     > 32 hours

## QUESTIONNAIRE ABOUT SAFETY AT WORKPLACE

### SECTION B

For section B, C, D, E, F please circle your answer according to Likert Scale as stated :  
*Bagi seksyen B, C, D, E, F sila bulatkan jawapan anda mengikut Skala Likert di bawah:*

- 1 = SD (Strongly disagree) (sangat tidak setuju)
- 2 = D (Disagree) (tidak setuju)
- 3 = N (Not sure) (tidak pasti)
- 4 = A (Agree) (Setuju)
- 5 = SA (Strongly agree) (Sangat setuju)

Each question please choose the best answer and circle once.  
*Setiap soalan sila pilih jawapan yang terbaik dan bulatkan.*

<b>B</b>	What is your perception towards your senior managers on emphasising the Safety Concern at workplace (SC). ( <i>Sejauh manakah Penyelia di tempat tuan mengambil berat mengenai keselamatan di tempat kerja.</i> )					
1	My senior managers stress the importance of wearing personal protective equipment. ( <i>Penyelia selalu mengingatkan saya tentang pentingnya menggunakan alat pelindung diri</i> )	1	2	3	4	5
2	My senior managers express an interest in acting on safety policies. ( <i>Penyelia selalu menunjukkan contoh dan teladan yang baik dalam mengamalkan polisi keselamatan.</i> )	1	2	3	4	5
3	My senior managers are concerned about safety improvement. ( <i>Penyelia selalu mengambil berat mengenai keselamatan semasa saya melakukan kerja.</i> )	1	2	3	4	5
4	My senior managers coordinate with other departments to solve safety issues. ( <i>Penyelia saya selalu bekerjasama dengan "bahagian keselamatan" bagi menangani masalah keselamatan pekerja.</i> )	1	2	3	4	5
5	My senior managers show consideration for workers. ( <i>Penyelia sentiasa mendengar masalah berkaitan keselamatan saya.</i> )	1	2	3	4	5

<b>C</b>	What is your perceptions towards your senior managers' respect for Safety Policy (SP). <i>Sejauh manakah persepsi anda mengenai pematuhan Penyelia anda kepada Dasar Keselamatan (SP)</i>					
1	My senior managers explained the safety mission clearly. <i>Penyelia menerangkan dengan jelas mengenai misi keselamatan kerja kepada saya.</i>	1	2	3	4	5
2	My senior managers emphasise worksite safety. <i>Penyelia selalu menekankan keselamatan di tempat kerja kepada saya.</i>	1	2	3	4	5
3	My senior managers have established a safety responsibility system. <i>Penyelia telah mewujudkan sistem kerja yang bertanggungjawab terhadap keselamatan di tempat kerja saya.</i>	1	2	3	4	5
4	My senior managers establish clear safety goals. <i>Penyelia saya telah mewujudkan sistem kerja yang selamat di tempat kerja saya</i>	1	2	3	4	5

<b>D</b>	Element to measure workers' perceptions of senior managers' Safety Motivation (SM). <i>Apakah persepsi pekerja terhadap Penyelia mengenai Safety motivation.</i>					
1	My senior managers reward those who set an example in safety behaviour. <i>Penyelia memberi ganjaran kepada saya apabila mengikuti langkah keselamatan semasa saya melakukan bekerja.</i>	1	2	3	4	5
2	My senior managers praise workers' safety behaviours. <i>Penyelia memuji saya apabila melaksanakan keselamatan pekerjaan semasa saya bekerja</i>	1	2	3	4	5
3	My senior managers have set up a safety incentive system. <i>Penyelia saya telah mewujudkan sistem memberi insentif kepada pekerja apabila mengambil langkah keselamatan semasa mereka bekerja.</i>	1	2	3	4	5

<b>E</b>	To measure perceptions of supervisors' safety management (SMx). <i>Menilai persepsi penyelia terhadap pengurusan keselamatan di tempat kerja</i>					
1	My supervisor discusses safety issues with others. <i>Penyelia selalu berbincang bersama-sama saya dan pekerja lain tentang isu keselamatan di tempat kerja saya.</i>	1	2	3	4	5
2	My supervisor conducts safety procedures. <i>Penyelia saya mengendalikan prosidur keselamatan di tempat kerja.</i>	1	2	3	4	5
3	My supervisor provides safety information. <i>Penyelia saya ada menyediakan maklumat mengenai keselamatan di tempat kerja.</i>	1	2	3	4	5

<b>F</b>	To measure the perception of safety performance (SPs). <i>Apakah persepsi anda terhadap prestasi keselamatan di tempat kerja</i>					
1	The frequency of accidents is reducing. <i>Kejadian kemalangan di tempat kerja di tempat anda bekerja telah berkurangan</i>	1	2	3	4	5
2	The frequency of equipment failure is reducing. <i>Peralatan di tempat kerja anda yang tidak boleh digunakan telah pun berkurangan</i>	1	2	3	4	5
3	Ambulance and department vehicle loss and damage is reducing. <i>Bilangan ambulance dan kenderaan jabatan yang rosak telah berkurangan</i>	1	2	3	4	5
4	The number of personal injuries is reducing. <i>Bilangan kemalangan di tempat kerja yang melibatkan staf telah berkurangan.</i>	1	2	3	4	5

\*\* SD = Strongly disagree D = Disagree N = Not sure A = Agree SA = Strongly agree