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KNOWLEDGE, ATTITUDE AND PRACTICE ON WORKPLACE SAFETY AWARENESS AMONG GOVERNMENT AGENCIES IN KOTA BHARU, KELANTAN

by

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ABSTRAK

Satu kajian telah dijalankan dalam kalangan agensi-agensi kerajaan di Kota Bharu untuk menilai tahap Pengetahuan, Sikap dan Amalan mengenai kesedaran keselamatan di tempat kerja. Persampelan rawak digunakan dan sebanyak 260 peserta telah terlibat dalam kajian ini. Soal selidik telah diedarkan kepada wakil majikan dan wakil pekerja untuk sampel kajian. Min umur peserta adalah 40 tahun dengan sisihan piawai 10.51. Para peserta yang mengambil bahagian dalam kajian ini mempunyai tahap pengetahuan yang tinggi, 85.1 peratus (min= 29.46, SD=5.15) tahap sikap yang positif, 67.6 peratus (min= 40.04, SD= 3.61) dan tahap amalan yang baik, 50.9 peratus (min= 25.92, SD= 4.55). Tahap siknifikan yang bererti di antara latihan dan amalan ($p<0.001$), tahap pengetahuan terhadap amalan ($p=0.05$) dan tahap sikap terhadap amalan ($p=0.05$). Kajian ini menunjukkan bahawa jika peserta diberi latihan tentang keselamatan di tempat kerja, mereka akan mempunyai amalan yang baik terhadap keselamatan. Peserta juga mempunyai tahap pengetahuan dan sikap yang tinggi, para peserta akan mengamalkan apa yang dipelajari oleh mereka dalam mencegah kemalangan di tempat kerja

ABSTRACT

A study was conducted among government agencies in Kota Bharu to assess the level of knowledge, attitude and practice on workplace safety awareness. A random sampling was used for the study and 260 participants were involved in this study. The questionnaires were distributed to the employer's representative and employee's representative. The mean age of the participants was 40 years with a standard deviation of 10.51. The participants who participated in this study had high level of knowledge, 85.1 percent (mean = 29.46, SD = 3.61), positive level of attitude 67.6 percent (mean = 40.04, SD = 5.15) and good level of practice, 50.9 percent (mean = 25.92, SD = 4.55). Significant associations were found between training and practice ($p< 0.001$), knowledge and practice ($p=0.05$) and attitude and practice ($p=0.05$). This findings study indicates that if people are given the training about the workplace safety, they may eventually have good practice in safety in the workplace. And also if they had high level of knowledge and positive attitude, they will practice what they know in prevent the accident at workplace.

LIST OF ABBREVIATION

KAP	:	Knowledge, Attitude and Practice
PPE	:	Personal Protective Equipment
SHC	:	Safety and Health Committee
SOP	:	Standard Operating Procedure
DOSH	:	Department of Occupational Safety and Health
OSHA	:	Occupational Safety and Health Act
SPSS	:	Statistical Program for Social Science
AJIM	:	American Journal of Industrial Medicine
MTUC	:	Malaysian Trade Union Congress
JEPeM	:	Jawatankuasa Etika Penyelidikan Manusia (Human Research Ethics Committee)
USM	:	Universiti Sains Malaysia
AJIM	:	American Journal of Industrial Medicine
JKJR	:	Jabatan Keselamatan Jalan Raya
JKR	:	Jabatan Kerja Raya
JAS	:	Jabatan Alam Sekitar

JPS	:	Jabatan Pengairan Dan Saliran
MTUC	:	Malaysian Trade Union Congress
SOCSO	:	Social Security Organization
IAEC	:	International Atomic Energy Commission
WSIB	:	Workplace Safety and Insurance Board
WCB	:	Worker's Compensation Board
ACSNI	:	Advisory Committee on Safety in Nuclear Installation
HSC	:	Health on Safety Commissioning

CHAPTER 1

INTRODUCTION

This thesis reports on a descriptive study that investigated the Knowledge, Attitude and Practice level (KAP) of safety awareness in the workplace among government agencies in Kota Bharu, Kelantan. The self-administered questionnaires were distributed to the participants to explore the participant's Knowledge, Attitude and Practice level. The purpose of this study was to identify the current level of Knowledge, Attitude and Practice on safety awareness among government agencies. This chapter briefly describes the context of the study, the purpose and the significance of the study.

1.1 Background and Significance

Safety at workplace is one of the important things and related to the safety of the community as well as their working environment. The issues of safety are the main agenda of the workplace. The working environment need to be safe and not a risk to the employer and people around. Therefore, the Malaysia Government through the Department of Occupational Safety and Health (DOSH) drafted an act on 1994 named Occupational Safety and Health Act (OSHA 1994). This act was drafted to give the guidelines to the employer and employee about their responsible to create the safe working environment.

The main provision of Occupational Safety and Health (OSHA 1994) require every employer both private or public sector and statutory authority to protect as practicably the health, safety and welfare of those who work for them. It relates particularly to the preparation and maintenance of plant and safe work procedure. Safety aspect cannot be taking for granted and needs to be concern because the company can save the cost if the accident at workplace is reduced. Hence, the involvement of employers in the safety aspect is essential to ensure the zero accidents at workplace.

However, the obligation to practice safety and health is not only on the shoulders of employers alone. The employee also responsible to ensure the safety at their workplace. The Act emphasis the concept of self-regulated. This concept tells that the employees are responsible to ensure the safety at their workplace because they faced the risk and work with the risk at workplace.

1.1.1 Occupational Safety and Health Act 1994 (Act 514)

Occupational Safety and Health Act 1994 (Act 514) was enforced on 25th February 1994 to make further provision for securing that safety, health and welfare of person at work, for protecting others against risks to safety or health in connection with the activities of person at work, to establish the National Council for Occupational Safety and Health, and for matters connected therewith (DOSH).

This act aims to encourage the comfortable working environment to the workers to adapt with their physiological and psychological needs and also to maintain and improve the standard of safety and health in the workplace. Principally, OSHA's goal is

to increase the level of safety and health awareness among employers and employees besides to enhance their commitment towards safety and health practices in the workplace.

This act was applied to the entire Malaysia. For all industries listed on Schedule 1 include manufacturing, mining and quarrying, construction, agriculture, forestry and fishery, utilities (electricity, gas, water and sanitary services), transport, storage and communication, wholesale and retail trades, hotels and restaurants, finance, insurance, real estate and business services, public services and statutory authorities (Section 1(2), OSHA 1994).

Workplace safety is a serious issue, one of the easiest to compromise in the place of work for the purpose of getting the job done at the least possible time but without sacrificing the quality of the work. Without realizing the consequences of exposures to work safety hazards, in evitable is how stakeholders are risking their lives in the process. The existence of poor health and safety awareness or poor workplace welfare could lead to injury or even death. The prevention of work related accidents and ill health should be a key priority within the workplace. Therefore, the necessity to increase the awareness of safety procedures and educating the workforce to contribute to the overall level of safety and health in their respective workplaces.

Raising awareness and expectations is pivotal in strengthening workplace commitment and motivation towards the achievement of high standard workplace health and safety performance. Embedding safety awareness as part of the culture, the importance of safety awareness is on preserving the quality of lives and preventing the workforce from getting injured. Being aware of the potential hazards in the workplace

and what are the protections available are other consideration. What makes for any workplace to cater to the needs of the workplace is the fact that people regard their workplace as their second home where people spend the major part of their day. It is vital to make the working community to feel safe and comfortable working in that place.

Safe workplace awareness for employees is central on providing them they know how and facilities to comply with safety regulations as well as protecting themselves, their coworkers and the community which will be directly or indirectly affected by the actions. Empowering them to report unsafe acts and unsafe conditions is also the goal of safety awareness. As such, it is an imperative for employees to create ownership of the safety problems and contribute to the prevention or solution to unfavorable situations by means of giving them a basic understanding of the accidents causation and hazard recognition in the workplace. According to Sayers and Monin, a secure and hazard-free workplace is also one of the determinants of employee's satisfaction that could be equated to being productive and better performance.

1.1.2 Global Burden of Occupational Safety and Health

Occupational injuries are estimated to kill more than 300,000 workers worldwide every year and cause a public health problem and also many more cases of disability (Concha-Barrientos *et. al.*, 2005). The December 2005 Special Issues of the American Journal of Industrial Medicine (AJIM) is dedicated to ''The Contribution Risk Factor to the Global Burden of Disease'' stated that the methodological requirements limited the occupational risk factors that could be studied globally so that the risks studied in

individual articles account only for about 800,000 of the estimated 2.2 million deaths that occur annually due to occupational risks (Concha-Barrientos *et. al.*, 2005. Mortality due to injuries tends to be higher in developing countries, where workers experience a greater number and variety of hazards that lead to injury, and where fewer resources for injury prevention, treatment and rehabilitation exist (Concha-Barrientos *et. al.*, 2005).

1.1.3 Workplace Safety in Malaysia

Malaysia is the first Asia country to have enacted Safety and Health Act covering all occupations in 1994 (Soehod and Kunju Pillai Laxman, 2003). Malaysia has a population of over 21 million, with 13 million workers in more than 600,000 workplaces. However it has been estimated that of these workplaces less than 4 percent had more than 10 workers (Sadhra *et al.*, 2001). Between 1985 and 1988 the number of cases of occupational diseases and injuries compensated within Malaysia rose by 40 percent (Sadhra *et al.*, 2001). In Malaysia, the Occupational Safety and Health Act (OSHA) was enacted in 1994 with the primary aim of promoting safety and health awareness and instilling a safety and health culture among the Malaysia workforce (Lugah *et al.,* 2010). The creation of awareness and implementation of occupational safety and health has been a slow and gradual process (Lugah *et al.,* 2010). Awareness activities can be used to reinforce positive attitudes and fortify safe working behaviors. Although the OSHA 1994 has now been in existence for more than ten years, current knowledge and awareness of occupational safety and health among workers in Malaysia is very limited (Lugah *et al.*,2010).

1.1.4 Workplace Safety in Japan and United States

According to the statistic compiled by the Japan Institute of Labor (1988) and the Japan Industrial Safety and Health Association (1994), Japan had a workforce injury and illness rate approximately five times that of the United States in 1952 (Wokutch and VanSandt, 2000). By 1999, the situation had reversed and the United States had an injury and illness rate almost 6 times as high as that of Japan (Soehod and Kunju Pillai Laxman, 2003). Japanese safety and health management system are integrated into the overall production and planning system. In Japan there were 142 lost-work injuries and illness for every fatality, whereas in the United States there were 927 for every fatality, even though the definition of lost-work injuries and illness are very similar in the two countries (Wokutch and VanSandt, 2000). In the United States, there were frequently hear managers complain about workers faking injuries to get time off work but in contrast, in Japan people sometimes complaining about and sometime bragging about workers who hid broken bones or severe lacerations out of sense of shame or company loyalty (Wokutch and VanSandt, 2000).

1.2 Problem Statement

The level of awareness in the public agencies regarding the existence of and compliance with Occupational Safety and Health Act 1994 (OSHA 1994) is still low. Selangor State Secretary, Datuk Ramli Mahmud said it could be due to the view that the Act was only for the industrial sector only. According to him, from the compliance audit OSHA by the Department Occupational Safety and Health (DOSH) over 137

government departments and agencies across the country, 70 percent is at least satisfactory and the rest is a good level.

Among those taken into account in the relevant act is the safety and disease risk in the workplace such as use of office equipment that is incompatible with the physiological and psychological needs of workers, poor quality indoor air, drugs, alcohol and stress and violence.

Director General of the Department of Safety and Health (DOSH) Datuk Ir Johari Basri said, statistics of cases involving public sector employees are not accurate because many departments have not reported the accident to DOSH as required by the OSHA 1994. He said more, although DOSH have received several reports of government departments but mostly related to road accidents involving employees and exposure to radiation and chemicals. He also said that out of 10 government departments audited in Sabah on 2007 found that four of them achieved good and satisfactory level while the rest are still at low levels.

Meanwhile, the State Secretary of Perlis, Mohd Zabidi Zainal when opening one-day seminar, said civil servants faced with Sick Building Syndrome if the office is not managed properly or failure to comply with the way government works. For example, civil servants who use computer for a long period will have the possibility of discomfort in the neck, shoulders and hands as well faced with health problem (Bernama.com, 2008).

The environment of the office at public department in Kota Bharu can be exposed to the danger of the employees such as the use of chemical and biological and physical effects, said Deputy Director General, Department of Occupational Safety and

Health (DOSH) Mohtar Musri. On 2008, 33 cases have been reported to DOSH involving lung disease, infection, skin allergies and hearing loss (DOSH, 2008). Mohtar said DOSH also recognize there are government offices that do not ensure the correct specification of the lighting system to cause any employee who is experiencing vision problems. Besides, there are others hazards that appears at the office such as the use of chemicals and dust on the photocopier (Mohtar Musri, 2009). The DOSH also have received complaints by employees who complained at their workplace are too noisy and exposed to dust, and the problem was solved by the DOSH and the employer involved.

1.3 Objective of the Study

1.3.1 General

- To assess the level of knowledge, attitude and practice on workplace safety awareness among government agencies in Kota Bharu, Kelantan.

1.3.2 Specifics

- To determine the association of level of knowledge and attitude with the level of practice and socio-demographic data with level of practice on workplace safety awareness among government agencies in Kota Bharu.
- To determine the relationship between knowledge and practice and attitude and practice score among government agencies in Kota Bharu.

1.4 Research Question

1. What is the level of knowledge among government agencies toward the safety awareness level?
2. What is the level of attitude among government agencies towards the safety awareness level?
3. What is the level of practice among government agencies toward the safety awareness level?

1.4 Purpose of Study

The purpose of this study is to identify the level of safety awareness among government agencies especially in Kota Bharu, Kelantan. To be more specific, the governments agencies will be choose at area Kota Bharu. JKJR, JKR, JAS, JPS, are the agencies which involve risky work.

I wish to conduct this study to identify how far the workers know about the safety at their workplace and also the exposure of the hazard and danger which might exist at their workplace. According to Vice President of Malaysian Trade Union Congress (MTUC), A. Balasubramaniam said that the legal of safety and health at this moment only the internal rules and therefore many companies do not care to pay attention to these aspect. For example, he also said, some employees were not provided with safety helmets or seat belts for employees who work at height. Statistics issued by the SOCSO showed a total of 56,339 cases were reported in 2007, he said adding that the amount was high compared to the number of workers in this country.

This study also will be conduct because there is lack or no research and study is done on safety awareness among government agencies until now. So, this will be the first study that will undergo with about more than twenty agencies will be selected as a subject.

1.6 Study Area

The study area of the research was around Kota Bharu district. The reason for chosen the government agencies in Kota Bharu is because it is the head of district which majority work task and work burden are more higher rather than the other district. Since, Kota Bharu is the main town in Kelantan and has very busy and hectic condition. So, it has a lot of factor that can relate to safety in the workplace. There are 30 departments were chosen to involve in this research where most of that departments located near to Kota Bharu Town. But, because of certain reason, some of the department was refuse to involve in this study. Only 26 departments were volunteered to participate in this study.

1.7 Theories

Studies based on the theory of reasoned action and planned behavior (Ajzen and Fishbein, 1980) and (Ajzen, 1988) there is significant association between health attitudes and risk behavior. The theory of reasoned action was developed by the mean of explaining health-related beliefs, attitudes and behavior (Rundmo *et al.*, 2003). Health-related beliefs are similar to safety beliefs since they might affect one's health. A major

assumption in this theory is that people behave sensible; they deliberately employ information from their surroundings and consider the implications of their actions. Attitudes, in this case, are determined by the belief that are desired outcome will occur if a particular behavior is followed, and that the outcome will be beneficial to health (Nutbeam and Elizabeth, 1999). In this case, it can be relate to a person's beliefs about what other people think he or she should do (normative beliefs), and by an individual's motivation to comply with those other people's wishes. For example, if an individual who smokes feels that most people do not smoke and that most of their valued friends and colleagues want them to quit, then it is most likely that the person would consider that there is a norm which favors quitting smoking.

The other theory is the health belief model where it was originally articulated to explain why individuals participate in public health programs such as health checks and immunization programs. The model suggest that the likelihood of an individual taking action related to a given health problem is based on the interaction between four different types of belief (susceptibility, severity, benefit and barrier). The model predict that individual will take action to protect or promote health if they perceived themselves to be susceptible to a condition or problem, and if they believe it will have potentially serious consequences; the perceived threat. They believe a course of action is available which will reduce their susceptibility or minimize the consequences, and that the benefits of taking action outweigh the costs or barriers. Later refinements have acknowledged the important modifying factors, particularly those associated with personal characteristics and social circumstances, and the impact of more immediate cues for action such as personal experiences. Added to this analysis is the concept of

self-efficacy that is the belief in one's competency to take appropriate action. For example, if we consider the application of this model to the prevention of accident in the workplace among employee in order to adopt behaviors which minimize risk of accident, individuals need to:

- Believe that they are at risk of accident.
- Believe that the effects of accident are serious.
- Believe that wearing personal protective equipment can protect themselves from any accident or injury.
- Believe that risk minimization practices (such as safe work procedure) will reduce the risk of accident.
- Believe in their ability to take effective action such as following and maintaining safe work procedure.

The third theory is social learning theory where this theory was built on an understanding of the interaction which occurs between an individual and their environment. Early psychosocial research tended to focus on the way in which an environment shapes behavior, by making it more or less rewarding to behave in particular ways. Most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are perform, and on later occasions this coded information serve as guide for action. For example if at work there is no regulation on where people are able to smoke cigarette, it is easy to be a smoker, if regulations are in place it is more difficult and most smokers smoke less and find such an environment more supportive for quitting.

1.8 Hypotheses

1.8.1 Null Hypotheses

- There is no association between socio-demographic data (age, gender, marital status, level of employment, educational level, training and working experience) with the level of practice on workplace safety awareness among government agencies in Kota Bharu.
- There is no association between the level of knowledge and attitude with the level practice on workplace safety awareness among government agencies in Kota Bharu.
- There is no relationship between the level of knowledge and attitude with the level of practice on workplace safety awareness among government agencies in Kota Bharu.

1.8.2 Alternate hypotheses

- There is an association between socio-demographic data (age, gender, marital status, level of employment, educational level, training and working experience) with the level of practice on workplace safety awareness among government agencies in Kota Bharu.
- There is an association between the level of knowledge and attitude with the level practice on workplace safety awareness among government agencies in Kota Bharu.
- There is a relationship between the level of knowledge and attitude with the

level of practice on workplace safety awareness among government agencies in Kota Bharu.

CHAPTER 2

LITERATURE REVIEW

2.1 Safety and Health Previous Study

Current developments in occupational health and safety research have promoted the importance of a safety culture (Murray M et al., 2006). This concept first came to prominence following the International Atomic Energy Commission report into the major accident at the Chernobyl nuclear power plant in Russia (IAEC, 1986). The Human Factors Working Group of the Advisory Committee on Safety in Nuclear Installation (ACSNI) (HSC, 1993) produced a popular definition; the safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determines the commitment to, and the style and proficiency of, an organization's health and safety management.

Government agencies and fish harvesters' unions have pursued a range of strategies designed to reduce the number of accidents in the industry (Murray M *et al.*, 2006). These have range from regulations on the size and shape of vessels to safety education programs ([Hopper and Dean, 2002] and [Wiseman and Burge, 2000]).

Runyan and Zakocs (2000) acknowledged a lack of research on educational interventions for workplace safety. A study have done by focusing on youth employees and found that analysis of intervention studies revealed three prominent theme that contribute to high level of youth workplace injuries: (a) low participation and delivery

rates of safety training programs, (b) youth workers' attitudes and expectations for safety in the workplace, and (c) the quality of training programs in promoting learning about safety issues (Chin *et al.*, 2010). Statistics of youth injury and death in workplace show that 850,000 youth workers, 15,000 suffer an injury resulting in missed work with an additional 13 youth killed in work-related injuries each year in Ontario, Canada (Workplace Safety and Insurance Board, WSIB, 2004). In British Columbia, it is estimated that one in 23 youth workers is injured on the job and that five young workers are permanently disabled each week as a result of workplace injuries (Workers' Compensation Board, WCB, 2002). By these statistics, we can know that awareness about safety in the workplace is very important thing to create a safety culture and prevent the accident as well as injuries.

2.2 Safety Training

The efficacy of training in reducing safety and health risk is controversial (Hwang S. A. *et al.*, 2000). Lewis *et al,*. (1998) analyzed association between farm injuries and possible risk factors and found that safety training did not seem to protect farmers from injuries. There are several studies that have attempted to relate a person's attitude toward safety to the use of safety precautions, including personal protective equipment (Hwang S.A. *et al.*, 2000).

2.3 Safety Awareness in the Workplace

One of the major factors leading to unsafe work in many developing countries is lack of safety awareness among the workers and employers and the concern by some employers to make colossal profit at the expense of safe work (Mbakaya *et al.*, 1999). The way around some of the currently pressing occupational health and safety problems is to intensify safety awareness as a preventive strategy. In South Africa, for instance, reduction of lead levels in the workforce and the working environment has been observed following attitudinal changes in an elderly and illiterate workforce through education and training (Lagan, 1996).

Between 1992 and 1999 electrocution was the fifth leading cause of all occupational fatalities in the United States and the cause of 1,144 electrocutions in the construction industry (Zhao *et al.*, 2009). The construction trades account for 39 percent of all occupational related electrocution fatalities and have second highest fatality rate out of all occupations (Taylor *et al.*, 2002). In a separate study, Janick (2008) noted only 26 percent of the construction fatalities listed as electrocution was connected to electricians, meaning that the majority of the electrocutions occur to non-electrical workers. Violence in the workplace can take various forms ranging from abusive language, threats and bullying to physical assault and homicide (Wassel, 2009). The highest rates of occupational violence incidents occur in occupations involving retail sales, law enforcement, teaching, health care, transportation and private security (Peek-Asa *et al.*, 2001).

International research has found workplace bullying to be a widespread problem in contemporary working life (Nielsen, Matthiesen & Einarsen, 2010). Exposure to workplace bullying has been repeatedly shown by researchers to have damaging

consequences for the target, observes and wide-ranging negative consequences for the organization (Hauge, Skogstad & Einarsen, 2009). In terms of how bully behaviors may be experienced, Keashly and Jagatic's (2003) adaptation of Buss's aggression typology – covert/overt, verbal/nonverbal, physical/nonphysical. At the individual level, targets are likely to have lower self-esteem, more negative emotion, anxiety, stress, fatigue, burnout and depression than non-targets (Agervold and Mikkelsen, 2004). Targets of workplace bullying have greater absenteeism, along with reduced job satisfaction, organizational commitment and work motivation (Loh *et al.*, 2010). Targets are also more likely to leave the organization (Djurkovic *et al.*, 2008).

An injury or illness is causes by an accident. According to Morris and Willcocks (1996:32) an accident is any unwanted situation that can cause injury and illness, damage to property, plant, environmental damage, loose of property and increase in liabilities. Hence, Morris and Willcocks stressed that an accident is the unplanned event which lead to danger, injury and obliteration.

Most all of accident happen with the reason and rarely happen by itself (Hommadi 1985). An accident happen causes loss of money and life. An example in United States, 3 million dollars have to paid every year in order to cover up the total cost to the employees resulted from an accident in the workplace (Wan Rosmini, 2000).

Based on the statistic on Industrial Accident Reported According to Accident Causes (1992-1996), an industrial accident form is falling, slammed, step on, hit by object, trapped by object, heavy movement, expose to or touch on high temperature, expose to electrocution and expose to dangerous objects (Wan Rosmini, 2000). Based on analysis, the highest number of accidents are causes by stepped on and hit by any objects

(Wan Rosmini, 2000).

Many workers are unaware of potential hazards present in their working environment, which let them more vulnerable to injury (Tam and Fung, 2008). Awareness can be any form to contribute to the compliance of safety rule in the workplace. Awareness also can be increase by the compliance of safety and health legislation where it can encourage high levels of participation by employees.

2.4 Work Hazard

The work hazard phenomenon is referring to the types of hazard that exist at the workplace. According to Hommadi (1985) work hazard can be divided into five categories, physical hazard, chemical hazard, biological hazard, mechanical hazard and psychological hazard.

2.4.1 Physical hazard

1. Temperature – effect that comes from continuous exposure towards higher temperature is burning, drying, stroke and cramped. Indirectly exposure can reduce competency, increased tiredness and increase the accidents rates.
2. Light – cause tiredness and reduce eye focus permanently.
3. Noise – unwanted sound that can distracting human ear and can cause to permanent deaf.

2.4.2 Chemical hazard

1. Inorganic

2. Organic
3. Gaseous

2.4.3 Biological hazard

1. Viral – leptospirosis, rabies, hepatitis
2. Bacterial – anthrax, tuberculosis
3. Fungal - dermatophytes, histoplasmosis
4. Parasitic – ancylostomiasis
5. Allergies

2.4.4 Mechanical hazard

At least 10 percent of the industrial accident happens cause by mechanical hazrad

1. Occupational accidents
2. Occupational injuries

2.4.5 Psychosocial hazard

1. Occupational stress
2. Mental stress
3. Depression
    - Work dissatisfaction
    - Burnout

2.5 Knowledge, Attitude And Practice Previous Survey

In 2005, a study on knowledge, attitude and practice regarding organic solvents among printing workers was carried out by Ignatius, Nga and Wong (2005). The study aimed at finding out the prevalence of good knowledge, appropriate attitude and safe practice among printing workers exposed to organic solvents, and to see if safe practice was influenced by the knowledge of and the attitude towards the harmful effects of organic solvent or not. In order to find out the knowledge of and attitude towards the harmful effects of organic solvents were explored using a questionnaire. Besides, multiple logistic regression analysis was conducted to identify the major factors that influenced the knowledge, attitude and practice of workers. The author found out that good knowledge of printing workers was positively associated with awareness of the relevant legislation and past drinking behavior and negatively associated with current smoking. However, safe practice did not depend on knowledge and attitude, but was positively associated with being informed of safety precautions and being supplied with chemical information by supervisors.

Paramasivam, Narayani and Anind (2007) conducted a study on Knowledge, Attitude and Practice Related to Occupational Health Problems among Garment Workers in Tamil Nadu, India. This study aimed at assessing the level of awareness of health problems among garment workers and their attitudes and practice to prevent the accident at workplace. A cross-sectional study (n=216) was used in which the workers employed in the three section had high levels of knowledge of the health problems, but the knowledge of personal protective equipment differed by section. More than one halfof the workers in all the section were aware of the benefits of PPE, but only a few workers in the cutting section were using PPE. There was a wide gap between their

knowledge level and practice with protective devices.

A survey conducted in South India by Kishore *et al.* (2008) on effectiveness of an educational program to promote pesticide safety among pesticides handlers of South India. It aimed to assess occurrence of poisoning and effectiveness of educational interventions among pesticides handlers in areas having high occurrence of occupational poisoning. It was found that educational intervention among pesticide handlers improved the knowledge, attitude and practice score for safe pesticides handling. Besides, it was recommended that continuous education and training programs for agricultural workers would promote awareness and minimize the hazards of occupational pesticide exposure.

CHAPTER 3

METHODOLOGY

Research methodology is important in all types of research. Methodology refers to the methods which are tools of data generation and analysis (Kulsoom, 2006). Methodology is identical to a research model employed by a researcher in a particular project, including basic knowledge related to the subject and research methods in question and frame work employed in a particular context (Lather, 1992). The methodology of this study constitutes type of study, study population, study area, study period, sample size, research instrument, ethical consideration, validity, reliability, pilot study, data collection process, data analysis and statistic application.

3.1 Study Design

The study design was descriptive study concerning Knowledge, Attitude and Practice of safety awareness in the workplace among government agencies in Kota Bharu, Kelantan.

3.2 Study Population

The population in this study was employees from government agencies who work permanently there for at least one year and are age between 21 – 60 years old. There were 26 departments involve in this study:

1. Jabatan Alam Sekitar
2. Jabatan Kimia Negeri
3. Jabatan Imigresen Negeri
4. Jabatan Penerangan Negeri
5. Jabatan Pelajaran Negeri
6. Jabatan Pertanian Negeri
7. Jabatan Perhutanan Negeri
8. Jabatan Perikanan Negeri
9. Jabatan Tenaga Kerja Negeri
10. Jabatan Ukur dan Pemetaan Negeri
11. Jabatan Pengairan dan Saliran
12. Jabatan Kastam Diraja Malaysia
13. Jabatan Pengangkutan Jalan Negeri
14. Jabatan Perhubungan Peusahaan Negeri
15. Suruhanjaya Pencegah Rasuah Malaysia
16. Jabatan Bomba dan Penyelamat Negeri
17. Suruhanjaya Pembangunan Koperasi Negeri
18. Jabatan Keselamatan dan Kesihatan Pekerjaan
19. Jabatan Audit Negara Cawangan Negeri Kelantan
20. Jabatan Perlindungan Hidupan Liar dan Taman Negara
21. Jabatan Keselamatan Jalan Raya Negeri

22. Jabatan Kerja Raya Negeri
23. Jabatan Pertahanan Awam
24. Jabatan Hal Ehwal Agama Islam Negeri
25. Majlis Perbandaran Kota Bharu
26. Jabatan Belia dan Sukan

3.3 Study Period

The study period is from October 2011 until May 2012.

3.4 Sample Size

Determining sample size (Daryle W. Morgan, 1970)

$$s = X^2NP\ (1-P) \div d^2\ (N-1) + X^2P(1-P).$$

Where s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level

(3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

$$s = X^2NP(1-P) \div d^2\ (N-1) + X^2P(1-P).$$

$$\frac{[3.841(1500x\ 0.50)(1-0.5)]}{[(0.05)^2\ (1500-1) + [\ (3.841)(0.5)(1-0.5)]}$$

$$= 306$$

3.5 Ethical Consideration and Confidentiality

The Human Research Ethics Committee of USM (JEPeM) reviewed the research proposal for ethical consideration and consent to conduct the survey. Purpose of the study was explained to the participants both verbally and in writing. A letter which described survey details were attached to the questionnaire (refer appendix). No questionnaire indicated name to ensure confidentiality of the participants.

3.6 Research Instrument and Measurement

A standardized questionnaire was developed from questionnaires which have been used in earlier studies and also self created by study on previous journal related to safety awareness and was used for the survey. The questions were directed towards gaining information regarding the employee's knowledge, attitude and practice on occupational safety. It also included the socio-demographic characteristics of the subjects. The questionnaire was translated from English to Malay and was made sure that the original meaning is retained.

3.6.1 Questionnaire

The Questionnaire Consist of 2 Parts

Part 1: Socio-Demographic Data

The socio-demographic information included were department, unit, position, gender, marital status, age, level of education, year joined, year of department established. Information regarding training related to safety at workplace too was integrated.

Part 2: Knowledge, Attitude and Practice Regarding Workplace Safety

This part consists of three sections which are knowledge, attitude and practice. There are 24 questions in Likert scale model. Likert scale were developed in 1932 as the familiar five-point bipolar response that most people are familiar with today (Likert, 1932). These scales range from a group of categories least to most, asking people to indicate how much they agree or disagree, approve or disapprove, or believe to be true or false (Allen and Seaman, 2007). Likert noted that descriptors could be anything, it is not necessary to have negative and positive response (Clason and Dormody, 1994). There's really no wrong way to build a Likert scale. The most important consideration is to include at least five response categories.

The rating scale was measured as follows:

Choice	Scores
Strongly agree	5
Agree	4
Uncertain	3
Disagree	2
Strongly disagree	1

In the first section, there were seven statements to know the knowledge of the safety awareness in the workplace. Each statement had five-point Likert scale and the score varied from 7 – 35 points and was classified into three levels as follows (Bloom's cut off point, 60 - 80 percentage)

High level (80%-100%)	28 – 35 scores
Moderate level (60%-79%)	21 – 27 scores
Low level (less than 59%)	7 – 20 scores

For the second section, there were ten statements of attitude towards the safety awareness in the workplace and was assessed by using Likert scale. The score varied from 10 – 50 points and was classified into three levels. They were positive attitude, neutral attitude and negative attitude as follows (Bloom's cut off point, 60 – 80 percentage)

Positive attitude (80%-100%)	40 – 50 scores
Neutral attitude (60%-79%)	30 – 39 scores
Negative attitude (less than 59%)	10 – 29 scores

There are seven items have been included in the third part and the score of practices regarding safety in the workplace varied from 14 – 70 points and were classified into three levels. They were good practice, fair practice and poor practice (Bloom's cut off point, 60 – 80 percentage)

Good practice (80%-100%)	28 – 35 scores
Fair practice (60%-79%)	21 –27 scores
Poor practice (less than 59%)	7 – 20 scores

Questions with five-point Likert rating scale, from strongly disagree to strongly agree were used to assess employee's knowledge, attitude and practice to safety awareness. Item testing knowledge included the existence and roles of Safety and Health Committee (SHC) in the workplace, training and education, audit program and emergency response plan. Items that tested employee's attitude included employee's responsibilities related to safety, the safety rule they have to follow, the action of the hazard, risk and danger that have been identified, the use of personal protective equipment (PPE), the employee's welfare facilities and also the procedure to report accidents in the workplace. Items that tested the employee's practice included the practice on personal protective equipment provided, the safety training and safety education provided and also their practice towards the safety rule in the workplace

3.6.2 Validity

Validity is the test which measures the desired performance and appropriate inferences can be drawn from the results (New Horizons for Learning, 2007). The assessment accurately reflects the learning it was designed to measure. Content validity was ensured by taking suggestions from qualified persons. The questionnaire was amended according to the suggestions.

3.6.3 Reliability

Reliability is the measure of consistency for an assessment instrument. The instrument should yield similar results over time with similar populations in similar circumstances (New Horizon for Learning, 2007). To ensure reliability, the questionnaire was pre-tested before the actual data collection began, with 10 percent of the total respondent who are work in government agencies. The internal consistency was analyzed by using Cronbach's Alpha Coefficient. Upon analysis, the Cronbach's Alpha result was 0.94 for the overall part.

3.6.4 Pilot Study

Pilot study is a smaller version or trial run of a larger study that is conducted in preparation for that study; can involve pre-testing or 'trying out' a research tool such as a data-collecting form (International Center for Eye Health, 2007). Pilot testing of the

questionnaire was done in 10 percent of the sample size of participants. The participants were asked the same questions as the actual study participants. The pilot test was done on 2nd and 3rd January 2012 at three departments, Jabatan Alam Sekitar, Jabatan Belia dan Sukan and Jabatan Kimia. They were asked to comment on any difficulties they face in understanding the question. It took 15-20 minutes for them to complete the questionnaire. Only the minor changes were made, no major adjustment was brought to the questionnaire after the pilot study. The questionnaire was translated into Malay language. The purpose of pilot testing was to ascertain if the questionnaire was easily understood, was completed in planned time and was indeed appropriate (Lakhan and Sharma).

3.6.5 Data Collection

After the distribution of questionnaires to all departments (1st April – 5th April 2012), then the data collection were done one week after the distribution. The purpose of the study and procedure of data collection was explained to the concerned authorities of the agencies involve. A working schedule was prepared after the discussion including dates for distribution and collecting questionnaires in each agency.

Questionnaires were distributed to the participants' randomly four to five agencies per day. Most participants returned the questionnaire one week after the distribution. The management of each agency allocated a coordinator to distribute and collect the questionnaire from all participants. This arrangement was done for the convenience of staff on duty

3.6.6 Data Analysis

Upon completion of data collection, all items were coded and analyzed by using SPSS Version 18.0 program. Frequency and percentages of socio-demographic data were obtained. Chi-squared test was used to find out the association between socio-demographic characteristic with practice level and also to find out the association between knowledge, attitude with the level of safety practice. Correlation was used to find out the relationship between knowledge and attitude with level of practice.

3.7 Conceptual Framework

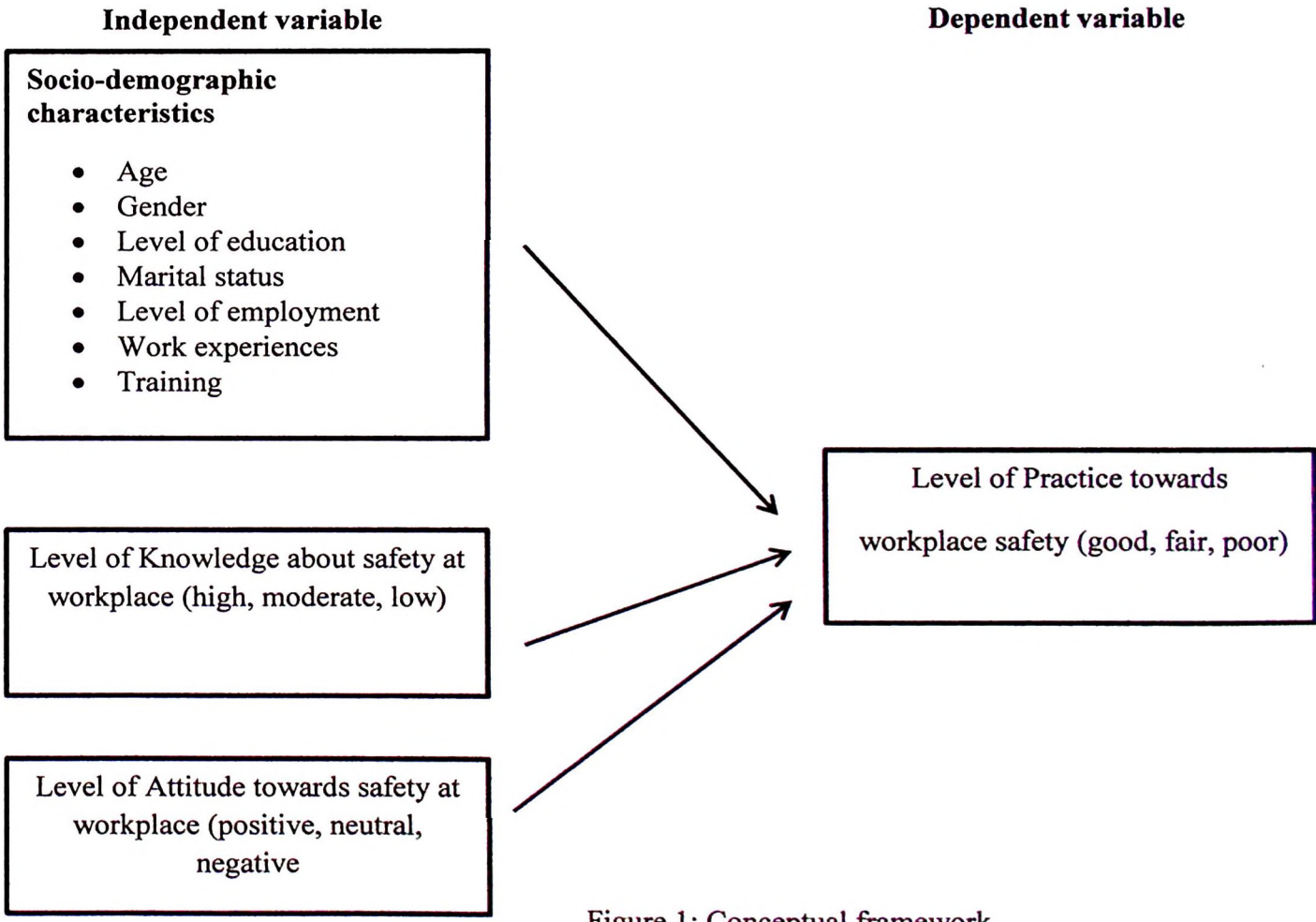

Figure 1: Conceptual framework

This conceptual framework consists of independent and dependent variable (Wan Rosmini, 2000). Dependent variable is the practice towards the safety in the workplace. While independent variable have three categories that are socio-demographic characteristics, knowledge about workplace safety and attitude towards safety in the workplace.

The socio-demographic characteristics may or may not influence the level of practice on workplace safety. There are seven factors that have to be found the association with the level of practice. The level of knowledge also may or may not influence the level of practice. High, moderate and low level of knowledge will affect the level of practice whether it will be good, fair or poor practice. Level of attitude also may or may not affect the level of practice.

3.8 Flow chart of research activities

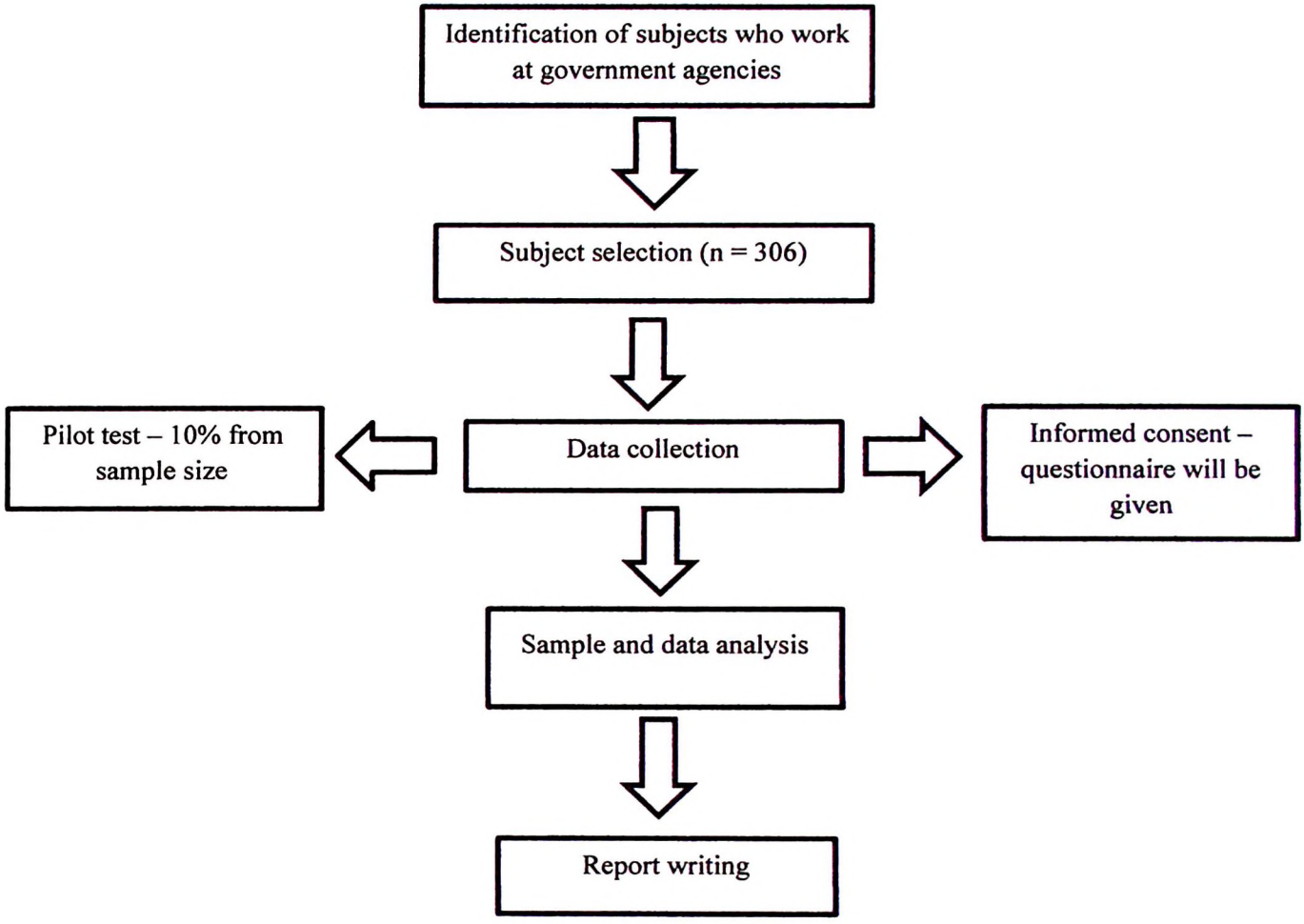

Figure 2: Flow chart of research activities

The flow chart of research activities begin with the identification of subjects who work at government agencies. This identification is referring to the inclusion criteria where age of subjects is between 21 to 60 years old and permanently who at government agencies at least one year working experience.

Then the flow will go to the total of subject selection. The total of 306 of subjects selection here is for 30 departments. But, because of some of them refuse to involve in

this study then the actual number of subjects is 260 for 26 departments.

Before the questionnaires distribute and data collections start, the questionnaire has to validate and must undergo pilot test to ensure the validity and reliability. 10 percent of the subject is taken to use as a pilot testing. And also the questionnaire has to get approval from ethical committee.

After the data collection was done, the research activities flows turn into sample and data analysis phase. The totals of 222 questionnaires were analyzed by using statistical method, SPSS Version 18.0 program. In this phase, the descriptive frequency, Chi-Square test and correlation were used to fulfill the objectives of the study.

CHAPTER 4

RESULTS

This chapter provides a detailed description of the results obtained from the analysis of the survey and the observation. The variables are described as simple percentages, means and standard deviations as appropriate on the nature of the variables. It starts with the demographic data followed by the responses for each section of the questionnaire. The level of knowledge, attitude and practice score were then presented followed by the results Chi square test used as appropriate, to see whether there is any association between socio demographic characteristic and level of knowledge attitude and practice. Lastly correlation was used to see the relationship between knowledge and practice and attitude and practice scores among the respondents.

4.1 Socio-demographic data

This study was conducted in Kota Bharu area of Kelantan. Two hundred and twenty two participants (222) completed the survey questionnaire. The majority of the participants were male (63.5%) while female is (36.5%). The age ranged from 21 to 60 years. Table 1 show that the majority of the participants (26.6%) were in the age range of 31-40 years, (23.0%) were younger than 31 years, (20.7%) were older than 41 years and (23.4%) were older than 51 years. More than half of the participants (81.5%) were married. Most of them were educated in SPM (28.8%) and most of them were employed

(67.1%). Most of them were had range between one to five years of working experience (22.5%). More than half (62.6%) of the participants said that they have attend the training related to safety that conducted by their department and also 66.7 percent of the participants said that their department gives the information about safety. 42.8 percent of the participants have reported and informed the accident happen at their workplace to their head of department as their person in charge when accident happen. There are some demographic characteristic have missing system which mean that there are some participants do not answer that particular demographic characteristic.

Table 1: Distribution of the participants by demographic characteristics

Characteristics	Number (n=222)	Percentage
Gender		
Male	139	62.6
Female	80	36.0
999	3	1.4
Age Group (years)		
21-30	51	23.0
31-40	59	26.6
41-50	46	20.7
51-60	52	23.4
999	14	6.3
Marital Status		
Single	35	15.7
Married	181	81.5
Widower/widow	2	1.0
999	4	1.8
Educational level		
UPSR	1	0.5
PMR	8	3.6
SPM	64	28.8
STPM	25	11.3
Diploma	57	25.6
Degree	53	23.8
PHD	1	0.5
Others	9	4.1
999	4	1.8

Table 1: (continued) Distribution of the participants by demographic characteristics

Characteristics	Number (n=204)	Percentage
Employment status		
Employer	69	31.1
Employee	149	67.1
999	4	1.8
Working experience (years)		
1-5	50	22.5
6-10	30	13.5
11-15	32	14.4
16-20	29	13.1
21-25	7	3.2
26-30	23	10.4
31-35	37	16.7
36-40	5	2.3
999	9	3.9
Training conduct by department		
Yes	139	62.6
No	83	37.4
Information about safety by department		
Yes	148	66.7
No	74	33.3
Person in charge when accident happen		
Director/Asst. Director	84	37.8
OSH representative	43	19.4
Head of department	95	42.8

4.2 Knowledge of the safety awareness

Table 2: Percentages of knowledge of the participants on safety of each individual item

Statement	Strongly agree (%)	Agree (%)	Uncertainty (%)	Disagree (%)	Strongly disagree (%)
1. Training and education provided can help to reduce accidents at workplace	32.4	64.0	2.3	1.3	0
2. Training and education can promote a safe work culture at the workplace	31.5	64.4	3.2	0.9	0
3. Audit program can give benefit to my organization	29.3	64.9	3.6	1.8	0.4
4. Audit program can identify the hazards, dangers and risks in the workplace	30.6	59.9	4.5	5.0	0
5. Emergency route plan has been displayed at every information corner	33.3	50.9	11.3	4.1	0.4
6. The existence of SHC can handle problems related to safety at the workplace	34.7	57.2	5.9	0.8	1.4
7. SHC played a role in training, educating and promoting a safe work culture at the workplace	26.1	67.6	5.0	1.3	0

Majority of the participants tick their score at the 'agree' column as their own perception toward the knowledge on safety in the workplace. A few statement related to safety in the workplace were test to see the knowledge of participants. The statements were randomly stated about safety. As shown in the table, majority participants tick at 'agree' column for all statements. The percentage for agree is 64.0, 64.4, 64.9, 62.6,

50.9, 57.2 and 67.6 respectively. The low percentage is at the column disagree and strongly disagree.

4.3 Attitude towards safety awareness

Table 3: Percentages of attitude of the participants on safety of each individual item

Statement	Strongly agree (%)	Agree (%)	Uncertainty (%)	Disagree (%)	Strongly disagree (%)
1. Hazard, danger, risk and exposure can cause accidents at work	23.9	69.8	5.0	0.8	0.5
2. The use of personal protective equipment (PPE) is important during performing risky job	26.6	59.6	11.3	1.1	1.4
3. Employee should follow the standard operating procedure (SOP) in the workplace	14.4	60.8	19.8	3.2	1.8
4. Employee should comply with safety rules in the workplace	24.3	64.9	9.0	1.4	0.4
5. Employers pay attention to ensure safety in the workplace in a good condition	22.1	60.8	13.1	3.2	0.8
6. It is responsible if colleagues suffer an injury while working	28.4	67.1	2.7	1.4	0.4
7. The welfare facilities provided such as mosque, toilet, pantry and others are in good condition	22.5	64.4	7.2	4.5	1.4
8. All employee know the procedure to reports accident in the workplace	12.6	62.2	20.3	4.5	0.4
9. All employee should know the action to be taken during an emergency	15.3	65.8	15.3	3.6	0

Table 3: (continued) Percentages of attitude of the participants on safety of each individual item

Statement	Strongly agree (%)	Agree (%)	Uncertainty (%)	Disagree (%)	Strongly disagree (%)
10. All employee know where the assembly point during an emergency	20.3	61.7	14.0	4.0	0

For the attitude part, most participants also tick and choose the agree column as their answer of their perception on every statement given. From statement number one until number ten, the percentages are higher than the others (69.8, 59.6, 60.8, 64.9, 60.8, 67.1, 64.4, 62.2, 65.8, and 61.7 respectively). Most of participant agree with the statement given and only a few participants tick at the strongly agree and disagree.

4.4 Practice on safety awareness

Table 4: Percentages of practice on safety in the workplace of each individual item

Statement	Strongly agree (%)	Agree (%)	Uncertainty (%)	Disagree (%)	Strongly disagree (%)
1. I have followed the safety training provided by my organization	13.5	53.2	23.9	9.4	0
2. I practice occupational safety training which I have received at my workplace	9.4	60.8	21.2	8.6	0
3. All new employees are given safety training on job from time to time	14.0	51.4	25.7	8.4	0.5
4. Promotion related to occupational safety gained	7.2	55.9	28.4	8.5	0

participation by all members					
5. I always follow the rule of safe work procedure	15.3	67.6	14.9	2.2	0
6. SHC members investigate any incidents that occur at the workplace	13.1	45.9	35.6	5.4	0
7. I wear the personal protective equipment (PPE) provided during performing job.	10.4	55.0	24.3	8.6	1.7

For the practice part, most participants also tick and choose the agree column as their answer of their perception on every statement given. From statement number one until number seven, the percentages are higher than the others (53.2, 60.8, 51.4, 55.9, 67.6, 45.9 and 55.0 respectively). Most of participant agree with the statement given and only a few participants tick at the disagree and uncertainty.

Table 5: Distribution of knowledge level on safety awareness in the workplace

Level	**Number (n=222)**	**Percentage**
High (80%-100%)	189	85.1
Moderate (60%-79%)	31	14.0
Low (< 59%)	2	0.9
Total	222	100.0

Minimum = 13	Maximum = 35	Mean = 29.46	SD = 3.61

Participants tick a total of seven statements about safety in the workplace. Questions with five-point Likert rating scale, from strongly agree to strongly disagree with the corresponding coefficients (1, 2, 3, 4, and 5) were used to assess knowledge on safety in the workplace. The total score were getting from the total of corresponding coefficient in every tick statement. The mean knowledge score is 29.46 (SD = 3.61). The range of knowledge score was from 7 – 35 score. Distribution of knowledge on safety in

the workplace showed that 85.1 percent of subjects had "high knowledge" as well as 14.0 percent of them had "moderate knowledge" while 0.9 percent had "low knowledge". Response for the 7 knowledge part of the questionnaire was summarized in Table 5.

Table 6: Distribution of attitude towards safety awareness in the workplace

Level	Number (n=222)	Percentage
Positive (80%-100%)	150	67.6
Neutral (60%-79%)	68	30.6
Negative (< 59%)	4	1.8
Total	222	100.0

Minimum = 17 Maximum = 50 Mean = 40.04 SD = 5.15

Participants tick a total of ten statements which had a total score of 50. Distribution of attitude on safety in the workplace of the participants is shown in Table 6. There were 67.6 percent of participants who had "positive attitude", 30.6 percent of them had "neutral attitude" and 1.8 percent had "negative attitude". The mean attitude score for all participants were 40.04 (SD =5.15). The range of attitude score was 10 – 50 score.

Table 7: Distribution of practice on safety awareness in the workplace

Level	Number (n=222)	Percentage
Good (80%-100%)	113	50.9
Fair (60%-79%)	89	40.1
Poor (< 59%)	20	9.0
Total	222	100.0

Minimum = 14 Maximum = 35 Mean = 25.92 SD = 4.55

Participants tick a total of seven statements which had a total score of 35. Distribution of practice on safety of the participants is shown in Table 7. There were 50.9 percent of participants who had "good practice", 40.1% of them had "fair practice"

and 9.0 percent had "poor practice". The mean score of practice is 25.92 (SD = 4.55).

The range of attitude score was 7 – 35.

4.5 Association of socio-demographic data and the level of practice on safety in the workplace

Table 8: Association of socio-demographic data and the level of practice on safety

Socio-demographic data	Practice level [n (%)]		Total	Chi square	df	p-value
	Good	Poor to Fair				
Age Group (year)						
21-30	25 (49.1%)	26 (50.9%)	51	2.85	3	0.415
31-40	30 (50.8%)	29 (49.2%)	59			
41-50	21 (45.6%)	25 (54.3%)	46			
51-60	32 (61.5%)	20 (38.5%)	52			
Gender						
Male	73 (52.5%)	66 (47.5%)	139	0.79	1	0.372
Female	37 (46.2%)	43 (57.8%)	80			
Marital status						
Single /widow /divorced	18 (48.6%)	19 (51.3%)	37	0.058	1	0.809
Married	92 (50.8%)	89 (49.2%)	181			
Level of employment						
Employer	32 (46.3%)	37 (53.7%)	69	0.67	1	0.412
Employee	78 (52.3%)	71 (47.7%)	149			
Educational level						
Secondary	54 (55.1%)	44 (44.9%)	98	1.53	1	0.215
Tertiary	56 (46.7%)	64 (53.3%)	120			
Training conduct by department						
Yes	83 (59.8%)	56 (40.2%)	139	11.55	1	0.001
No	30 (36.1%)	53 (63.9%)	83			
Working experience (years)						
1-5	25 (48.0%)	27 (51.9%)	52	0.350	1	0.554
> 5	85 (52.8%)	76 (41.9%)	161			

The socio-demographic characteristic that has shown a significant association with the level of practice on safety in the workplace was training that conducted by their department with p-value of 0.001. The other socio-demographic characteristics such as age group, gender, marital status, level of employment, educational level and working experience had no significant association (p-values – 0.415, 0.372, 0.809, 0.412, 0.215, 0.554 respectively).

Some of the socio-demographic data had low expected value (< 5) more than 20 percent of cells which was not suitable for Chi Square. Therefore, these particular socio-demographic characteristics were combined to form new group. Marital status was grouped into married and single (single, widows and divorced were combined). The educational level also divided into two groups, secondary level and tertiary level. Those who are from primary and secondary until high school level were grouped together into secondary level while tertiary level include undergraduate until postgraduate level. For working experience also divided into two groups that are 1-5 years working experiences and more than 5 years working experience. The practice level also was combined into two groups. The fair and poor level was group into "poor to fair" group and the good level is maintained.

4.6 Association of knowledge and level of practice

Table 9: Association of knowledge and level of practice among employee

Level of practice	Level of knowledge		Total
	High	Low to moderate	
Good	106 (93.8%)	7 (6.2%)	113
Poor to Fair	83 (76.1%)	26 (23.9%)	109
$X^2 = 13.67$	df = 1	p-value = 0.00	

4.7 Association of attitude and level of practice

Table 10: Association of attitude and level of practice

Level of practice	Level of attitude		Total
	Positive	Neutral to negative	
Good	102 (90.3%)	11 (9.7%)	113
Poor to Fair	48 (44.0%)	61 (56.0%)	109
$X^2 = 54.10$	df = 1	p-value = 0.00	

To obtain the association between knowledge, attitude and safety practice among government agencies in Kota Bharu, the three levels (low, moderate and high) were divided into two groups due to low expected value (< 5) more than 20 percent of cells were not suitable for Chi Square test. The knowledge level was divided into 'high' and 'low to moderate' groups combining both groups. Likewise attitude was divided into 'positive' and 'neutral to negative' groups. For practice was divided into 'good' and 'poor to fair' groups.

As shown in the Table 9 above, majority of the participants had high level of knowledge and had good practice level as well (93.8%). The association was significant with a p-value of 0.00 as shown in the table above. For the association between attitude and practice level, most of the participants had positive attitude together with good practice level (90.3%). Since the p-value is less than 0.05 so the association was significant.

4.8 Correlation between knowledge, attitude and level of practice

Table 11: Correlation between knowledge and practice

		Score of knowledge	Score of practice
Score of knowledge	Pearson Correlation	1	.335**
	Sig. (2-tailed)		.000
	N	222	222
Score of practice	Pearson Correlation	.335**	1
	Sig. (2-tailed)	.000	
	N	222	222

**** Correlation is significant at the 0.01 level**

Table 12: Correlation between attitude and practice

		Score of attitude	Score of practice
Score of attitude	Pearson Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	222	222
Score of practice	Pearson Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	222	222

**** Correlation is significant at the 0.01 level**

Knowledge, Attitude and Practice regarding safety awareness in the workplace were also treated as continuous variables, and correlation coefficients were computed. Knowledge about workplace safety had significant positive correlation (r = .335**) with safety practice (p = 0.000), meaning people who have high knowledge on workplace safety will have good safety practice. The attitude also showed significant positive correlation (r = .718**) with safety practice (p = 0.000) as shown in table above for both the relationship of knowledge and attitude with the level of safety practice.

CHAPTER 5

DISCUSSION

5.0 Discussion

In this chapter, a brief description of the findings will be discussed. From the 222 participants involve in this study, there are certain data that categorized as missing value resulted from the unanswered question by the participants. So there are some data not equal to 222.

5.1 Distribution of socio-demographic characteristics

There are nine (9) socio-demographic characteristics that have been analyses to show the distribution of the participant's demographic. There are gender, age group, marital status, educational level, employment status, working experience, training conducted by department, information regarding to safety and person in charge when accident happen. For gender, the higher number is from male participants which is 139 (63.5%) from 219 participants while female is only 80 (36.5%). In this data there are 3 missing value where some participants did not mention their gender in the questionnaire. There are more male participants than female in the government agencies because male are tend to be employed by the government due to men's ability to work out station rather than female (Ahmed N, 2008). For the age group, this study have range the age of

the subject from 21 to 60 because mostly in Malaysia the starter age of employed person is around 21 years old and above. From the data that has been collected, the higher number is on age group of 31-40, 59 (26.6%) compared to the other age groups. This is because government agencies in Malaysia will employ person that has long experience in any jobs field before they join the government agencies. This is because government wants to employ a really experienced and competent person as their community member in order to increase their best performance in Malaysia. The low number of age group is the range 41-50, 46 (20.7%). This is because this range of this group is more to the top management or as a higher authority in the government agencies. The top management is the minority group of number. In this data also have missing value that is 14. Only 208 participants have mention their age in the questionnaire.

For marital status, there is more married participant than widow or divorced and single who are work at government agencies. Married participants comprised 181 (81.5%) and single, widow and divorced comprised 35 (15.8%) and 2 (10.0%) respectively. There are more married participant than the others because the higher number in age group is range between 31-40 years old. Mostly, in this range of age group, most people are already married and having their own family. There are 4 missing value in this data. For educational level, the highest number is from SPM level, 64 (28.8%), the second highest is from Diploma level, 57 (25.7%), while the Degree level is 53 (23.9%), STPM level is 25 (11.3%) and the low number is from PMR, primary school, PhD and others. Others in this category is from 'Sijil Politeknik' which is only 4.1 percent. Most of the participants are from the SPM level and they can answer the question provided clearly and understand the terms used in the questionnaire.

Moreover, they also have attended the training and seminar related to the workplace safety and this resulted in high level of knowledge about safety in the workplace. When asking them about the safety and health policy and safety and health committee, they already know the existence of both. For the data of employment status, the employee is the highest number which is 149 (67.1%) while employer is 69 (31.1%). This is because as we know the most of the participants is from SPM level and tend to be employee rather than employer.

For working experience, most employees had 1-5 years work experience 50 (22.5%). Work experience here means experience they have been with government agencies. The second highest of number in working experience is from 31-35 years 37 (16.7%). For the training conducted by the department, most of the participant had attended the training organized by their department. 139 (62.6%) have attended the training and 83 (37.5%) have not attend the training and also 148 (66.7%) said that their department provided the information about safety in the workplace. Mostly, when the accident happen, the head of department or unit will be responsible to take over. 42.8 percent said they will notice their head of department when accident happens.

5.2 Knowledge, Attitude and Practice Level of participants

From the data analyzed, there were 189 score at the high level of knowledge and the percentage is (85.1%), while 31 (14.0%) score at the moderate level of knowledge and 2 (0.9%) score at the low level of knowledge. From the 222 participants involve in this study, their knowledge about safety awareness in the workplace is at the higher

level. They are aware with the safety at the workplace because they have attended training organized by their department and also expose to many source of safety input from their workplace. The organization management plays a role enough in term of safety to protect their worker and to give enough information and education about safety awareness. Moreover, this public sector has a difference situation compared to the other sector. Even though the government agencies have gone many training, education and information about safety, the number of workplace accident never have high number of cases since they are not exposing to many high risk job if compared to the other sector. According to the statistic by DOSH, by 2011 the number of accident reported for public sector is 67 cases including fatal and non-fatal accident compared to manufacturing sector which is 1,649 cases.

For the level of attitude, there were 150 (67.6%) score at positive attitude, 68 (30.6%) score at neutral attitude and 4 (1.8%) score at negative attitude. There are using the personal protective equipment that provided by their department during performing risky job. This means that their attitude toward safety and attitude to work in safe condition is high. Besides that, they also follow the Standard Operating Procedure (SOP) made by their department. This shows that their attitude towards safety is high in order to create a safety workplace. One statement said that the employee should be responsible if their colleagues suffer an injury while working. About 67.1 percent agree with the statement. About 64.4 percent of participants agree that the employee's welfare at their workplace such as toilet, pantry, mosque and others are in good condition and they also agree that their employers pay attention to ensure safety in the workplace in a good condition. Besides that, the employees also agree on the action to be taken during an

emergency and know where the assembly point is. Last but not least, most participants agree with the compliance of safety rule in their workplace. They are follow the safety rule and procedure in order to avoid accident in the workplace.

For the level of practice, the good practice level is at the 50.9 percent comprised 113 participants. 40.1 percent is at the fair practice level and 9.0 percent at the poor practice level. This part has seven statements that testing their level of safety practice. 53.2 percent agree and they followed the training provided by their department and practice it at their workplace. All new employees are given safety training on job from time to time. They also agree that promotion and any awareness related to occupational safety are gained participations by all members.

5.3 Association of socio-demographic characteristic of participants with level of practice

The results of this study showed that the demographic data were not correlated with level of practice except for training. Therefore the demographic characteristics investigated in this study were not significantly associated with level of practice excluding the variable of training. This study only found that training had significant association with level of practice behavior of safety awareness among the participants. Training is one way to increase the participant awareness about safety because they were attended the training session and get many inputs about safety in the workplace. This study had similar finding with Nazeera Najeeb (2007) where training on infection

control practices implies that performance of trained staff is better than those who did not have any form of training on infection control practices, which is true.

Age group showed no significant association with the level of practice. The age group is not a factor that can be measure to find the association between knowledge level with practice level because age is not depend on the people's knowledge. No specific age can be measure unless they are willing to practice for their safety or to save their property from damage. The age factor cannot tell the level of practice even though young people or older people. Some may said that the older people will have more experienced and knowledge and tend to practice what they have been through all this while but it is not necessary because it is totally depends to the individual itself either they are aware about the importance of workplace safety.

This study also found that gender had no significant association with the level of practice. This is because gender cannot represent the practice level if both gender had no knowledge or input about safety. Since they are more male than female in this study, it showed the difference perspective between it. Male are more tends to not take a serious with matter like this rather than female. Marital status showed no significant association with the level of practice. Maybe married and single people did not practice the safety because they think they are not work in a very risky job and risky work condition. Since public sector does not much have accident and injury occur compared to other sector.

Level of education status had no association with the level of practice on safety. This does not mean that education was not an important factor but there might be other factors which fall short to apply education into practice. One reason might be educated people will have more of other responsibilities and have less time to practice the safety

matter. People may have high knowledge but they are careless to put them into practice. The level of employment also showed no association with the level of practice. This is because if the higher management did not show and played an important role in workplace safety, then the lower management will look this issue as a small issue and take it for granted. The higher management did not practice and maybe there are too busy and no much times to take the workplace safety issue as their one of the priority in their organization. There are a lot of other issue to handle and the workplace safety issues is just a small part of their responsibilities and the cases involve safety at workplace very rarely occur at the government agencies. That is why employer and employee does not associate with the level of safety practice in the workplace

5.4 Association of level of knowledge and level of practice

The Chi-Square value was found to be 13.67 with degree of freedom one. The p-value is 0.00 which mean there is a significant between level of knowledge and level of practice. There is an association between knowledge level with the practice level. By using Chi Square test, this association show that the level of knowledge with practice is at high knowledge level with good practice which comprised to 93.8 percent. While 76.1 percent is at the high knowledge level but poor to fair practice. The poor to fair practice is the level where the poor level tends to be fair level of practice. Because of very rare participant at the level of poor then it tend to be at the fair level. Clearly the participants who participated in this study had a high level of knowledge (85.1 percent) where they know the importance of safety awareness in the workplace. Most of the participant

expose to the training regarding occupational safety in the workplace. They absorb all the information they get and tend to practice most of the information. It is also a matter of motivation and perceived benefits. One study said that, training influenced 30 percent of the safety and health awareness in the workplace and act as key element in order to aware the employees regarding workplace safety and health (Wan Rosmini, 2000). The participants also know the existence of Safety and Health Committee (SHC) can handle problems related to safety at the workplace. From 26 departments involve in this study, fifteen departments have SHC at their workplace. One of the role of SHC is to investigate the accident occur at the workplace and also played a role in training, educating and promoting a safe work culture at the workplace. More than half of the total of departments has SHC and this leads to the high level of knowledge among the participants. The existence of SHC can lead to the proactive safety and health matter in the workplace. Besides that, the participants know the emergency route plan has been displayed at every information corner. The emergency route plan must be displayed as the safety precaution during emergency so the employees will know and aware where should they assemble during emergency happen. Audit program such as safety audit and risk assessment can identify the hazard, danger and risk in the workplace. Most participants agree with the statement of audit program because they know the function of safety audit and risk assessment can identify the unsafe condition and unsafe act that may exist in the workplace.

5.5 Association of level of attitude and level of practice

For association of level of attitude with the level of practice, the Chi-Square value was 54.10 with degree of freedom one and p-value is 0.00. This means there is an association between knowledge level with practice level. The result shows that most participants had positive level of attitude with good level of practice (90.3 percent). While (56.0 percent) had neutral to negative level of attitude with poor to fair level of practice. It is true that if there is high level of positive attitude will directly have good of practice. In this study, we can see the participant positive in attitude level is when they use the personal protective equipment (PPE) provided by their manager during performing risky job. Means they are know the impact without wearing PPE during performing risky job. They know the use of PPE as a device to protect them from an injury or illness resulting from contact with workplace hazards. Their attitude to work in a safe workplace condition is high and to prevent any accident and injury. If compared to employees who had negative attitude, they will ignore about wearing PPE during performing risky job. This positive attitude will directly give positive and better practice on safety performance. Besides that, the participants also know the importance of Standard Operating Procedure (SOP). The SOP is a detailed, written instruction to achieve uniformity of the performance of a specific function (International Conference on Harmonization, ICH). They have positive attitude to avoid any accident or injury might happen in their workplace by follow the SOP.

5.6 Correlation between knowledge and attitude level with practice level

Correlation was run to determine the relationship between participant's level of attitude and their level of practice on safety. It also measures the strength and the direction of association that exist between two variables.

High level in knowledge also enhanced the level of practice for which Pearson correlation was significant at the level 0.001 (r = 0.335**). This mean there is a strong, positive relationship between knowledge level with practice level. People who have high level of knowledge will have good practice on safety awareness in the workplace. This linear relationship has directly affected the variables. When people have information and education with more knowledge about workplace safety, they will apply and practice what they have learned.

Improvement in attitude also enhanced the level of practice. Pearson correlation shows 0.718 with significant value at the level 0.001. This mean there is a strong, positive relationship between attitude level with practice level. The positive level of attitude will have good practice level. Participants with positive attitude will show their good practice with their alertness to workplace safety by increase their sensitivity towards safety issue that happen around them. If more people become alert with their surroundings, the workplace accident and injury can be reduced.

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

As a conclusion, this study had answered the research questions where the level of Knowledge, Attitude and Practice were in a high, positive and good level respectively. The government agencies in Kota Bharu give a positive result to the findings especially the main objectives of this study. From the study conducted, the training of workplace safety played an important role to the employer and employee who work at the government agencies in order to increase the awareness on the occupational safety.

This was a descriptive study conducted to assess the level of Knowledge, Attitude and Practice of workplace safety awareness among government agencies in Kota Bharu, Kelantan. The study was conducted from 1st April 2012 to 5th April 2012 in 30 government agencies in Kota Bharu. But only 26 agencies undergo the survey because of a few reasons and some of the department did not give the cooperation and they refuse to involve in this study. This study was got an endorsement from Department of Occupational Safety and Health Kota Bharu and they gave the approval to conduct the study. A pilot study was conducted on 2nd and 3rd January 2012 in 3 agencies to test the reliability and validity of the questionnaires. The result of Cronbach's Alpha

coefficient for knowledge part were 0.91, attitude part 0.90 and practice part 0.93. We can see the Cronbach's Alpha indicates high level of internal consistency for every part.

A self-administered, anonymous 260 questionnaires were distributed and the return rate was 85.38 percent. From the 260 questionnaire distributed, only 222 questionnaires was returned. The sample population of 26 agencies that involve in this study is male (63.5%) and female (36.5%). Findings have shown that the age group of most participants both male and female is range between 31-40 years old (26.6%) and majority of them were married (81.5%). Among participant position is employees where most of them were from SPM and Diploma level of education. Percentage of participants who have and did not attend the training included 62.6 percent and 37.4 percent respectively.

Frequency distribution was used to analyze the level of knowledge, attitude and practice among participants and Chi-Square was used to analyze the socio-demographic data, the level of knowledge and attitude with the level of practice. Correlation was done to analyze the relationship between factors of knowledge and attitude with practice of workplace safety.

The result of this study showed that the level of knowledge of participants is high, while the level of attitude is positive and the level of practice is good. The only socio-demographic characteristics showed a very high significant association between the level of practice was training with p-value 0.001. The other socio-demographic characteristics have no significant association with the level of practice. The association between the level of knowledge and attitude with the level of practice had a significant association with p-value 0.001. Majority of the participants had high level of knowledge

with good practice and positive level of attitude with good practice. The analysis of correlation between knowledge, attitude and practice discovered a significant relationship at the level 0.01. Overall participants who had better knowledge and attitude toward workplace safety awareness had reported better performance in their practice.

6.2 Limitations

1. Some of the questionnaires were not returned by the participants.
2. Instead of self-administered questionnaires, the participants should answer the questionnaire with guide by researcher to avoid the misunderstand of questions
3. A form like audit or checklist may be necessary to be more specific item to observe during observation at the workplace

6.3 Recommendation

Due to time and resource limitation, the study has been conducted in Kota Bharu only and hence it might not be a representation of the state as a whole. In future, more studies should be conducted in district as well to find out the patterns of Knowledge, Attitude and Practice of workplace safety awareness in these populations.

In the measurement tool, the number of items measure should be as short, brief and easy to understand as possible because the participants do not have much time to allocate for the survey session. The closed-ended question also should include especially for knowledge and practice part.

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APPENDICES

APPENDIX A

Questionnaire

Part 1: Socio-demographic information

No Siri: _____
Series No:

Jabatan: _____
Department

Unit: _____
Unit

Jawatan / Pangkat: _____
Position/Title

Sila Tanda (√) pada kotak yang berkenaan.
Please Tick (√) in the appropriate box.

1) Jantina : ( ) Lelaki ( ) Perempuan
Sex *Male* *Female*

2) Status : ( ) Bujang ( ) Berkahwin ( ) Duda ( ) Balu
Status *Single* *Married* *Widower* *Widow*

3) Umur : _____ Tahun
Age *Year*

4) Tahap Pendidikan :
Level of Education

( ) Sekolah Rendah ( ) SRP/PMR ( ) SPM ( ) STPM
Primary School *SRP/PMR* *SPM* *STPM*
( ) Diploma ( ) Ijazah ( ) PHD
Diploma *Degree* *PHD*
( ) Tidak Bersekolah ( ) Lain-Lain (Nyatakan): _____
Not attend school *others (Specify)*

5) Jumlah Kakitangan: _____ Orang
Number of Employee *People*

6) Tahun mula berkhidmat: _____
Year Joined

7) Tahun Jabatan ditubuhkan: _____
Year of Department Established

8) Jumlah Kemalangan melibatkan pekerja yang dilaporkan dalam setahun: _____
Number of reported accidents involving employees in a year

9) Sekiranya berlaku kemalangan di tempat kerja anda, siapa yang akan dimaklumkan?
In the event of accident at your workplace, who will be notified?
(Nyatakan): _____
(State)

10) Adakah organisasi anda memberikan penerangan yang jelas mengenai aspek keselamatan dan kesihatan di tempat kerja? _____ (Ya/Tidak)
Does your organization provide a clear description on the safety and health aspects at workplace? _____ *(Yes/No)*

11) Pernahkah Jabatan/Organisasi anda mengadakan Kursus/Latihan berkaitan Keselamatan dan Kesihatan di tempat kerja? _____ (Ya/Tidak)
Does your Department/Organization arrange Course/Training related to safety and health at workplace? _____ *(Yes/No)*

12) Jika "Ya" pernahkan anda mengikuti mana-mana Kursus Keselamatan dan Kesihatan yang di adakan?
If "Yes" Have you followed any Safety and Heallth Courses held at your workplace?
_____ (Ya/Tidak) _____ (Berapa Kali)
(Yes/No) *(How many times)*

Part 2: Knowledge, Attitude and Practice of Workplace Safety

Sila Tanda (√) pada kotak yang berkenaan.
Please Tick (√) in the appropriate box.

SEKSYEN 1 : PENGETAHUAN *SECTION 1 KNOWLEDGE*						
BIL	SOALAN *QUESTION*	Sangat Tidak Bersetuju *STRONGLY DISAGREE*	Tidak Bersetuju *DISAGREE*	Tiada Keputusan *UNCERTAIN*	Setuju *AGREE*	Sangat Bersetuju *STRONGLY AGREE*
1	Kewujudan JKK dapat menangani masalah berkaitan keselamatan di tempat kerja *The existence of SHC can handle problems related to safety at the workplace*					
2	JKK memainkan peranan dalam melatih, mendidik dan mempromosi budaya kerja selamat di tempat kerja *SHC played a role in training, educating and promoting a safe work culture at the workplace*					
3	Latihan dan pendidikan yang diadakan dapat membantu mengurangkan kemalangan di tempat kerja *Training and education provided can help to reduce accidents at workplace*					
4	Latihan dan pendidikan dapat mempromosikan budaya kerja selamat di tempat kerja *Training and education can promote a safe work culture at the workplace*					

5	Program audit dapat memberikan faedah kepada organisasi saya *Audit program can give benefit to my organization*					
6	Program audit dapat mengenalpasti hazad, bahaya dan risiko di tempat kerja *Audit program can identify the hazards, dangers and risks in the workplace*					
7	Pelan laluan kecemasan telah dipamerkan di setiap sudut informasi *Emergency route plan has been displayed at every information corner*					

SEKSYEN 2 :
SIKAP
SECTION 2 :
ATTITUDE

BIL	SOALAN	Sangat Tidak Bersetuju *STRONGLY DISAGREE*	Tidak Bersetuju *DISAGREE*	Tiada Keputusan *UNCERTAIN*	Setuju *AGREE*	Sangat Bersetuju *STRONGLY AGREE*
8	Saya tahu hazad, bahaya, risiko dan pendedahan yang boleh menyebabkan kemalangan di tempat kerja *I know the hazards, dangers, risks and exposures that can cause accidents at work*					
9	Penggunaan alat pelindung diri (PPE) adalah penting semasa menjalankan tugas berisiko *The use of personal protective equipment (PPE) is important during performing risky job*					
10	Saya tahu Prosedur Standard Operasi (SOP) di organisasi saya *I know the standard operating procedure (SOP) in my organization*					
11	Saya perlu mematuhi peraturan keselamatan di organisasi saya *I need to comply with safety rules in my organization*					
12	Majikan memberi perhatian dalam memastikan keselamatan di tempat kerja dalam keadaan yang baik *Employers pay attention to ensure safety at the workplace in a good condition*					
13	Saya rasa bertanggungjawab jika rakan sekerja mengalami kecederaan semasa bekerja *I feel responsible if my collegues suffer an injury while working*					

14	Saya berpuas hati dengan kemudahan kebajikan yang disediakan seperti surau, tandas, pantri dan lain-lain *I am satisfied with the welfare facilities provided such as mosque, toilet, pantry and others*					
15	Saya tahu prosedur melaporkan kemalangan di tempat kerja *I know the procedures to report accidents at workplace*					
16	Saya tahu tindakan yang harus diambil jika berlaku kecemasan *I know actions to be taken in an emergency*					
17	Saya tahu dimana tempat berkumpul semasa berlaku kecemasan *I know where the assembly point during an emergency*					

SEKSYEN 3 :
PRAKTIK
SECTION 3 :
PRACTICE

BIL	SOALAN	Sangat Tidak Bersetuju *STRONGLY DISAGREE*	Tidak Bersetuju *DISAGREE*	Tiada Keputusan *UNCERTAIN*	Setuju *AGREE*	Sangat Bersetuju *STRONGLY AGREE*
18	Saya mengikuti latihan keselamatan yang disediakan oleh organisasi saya *I have followed the safety training provided by my organization*					
19	Saya mengamalkan latihan berkaitan keselamatan pekerjaan di tempat kerja yang diikuti semasa latihan *I practicee occupational safety training which I have received at my workplace*					
20	Semua pekerja baru diberikan latihan berkaitan keselamatan pekerjaan dari semasa ke semasa *All new employees are given safety training on job from time to time*					
21	Promosi berkaitan keselamatan pekerjaan mendapat penyertaan dari semua anggota *Promotion related to occupational safety gained participation by all members*					
22	Saya sentiasa mematuhi prosedur kerja yang selamat *I always follow the rule of safe work procedure*					

23	Ahli JKK menyiasat sebarang kemalangan yang berlaku di tempat kerja *SHC members investigate any incidents that occur at the workplace*					
24	Saya memakai alat pelindung diri (PPE) yang disediakan semasa menjalankan tugas *I wear the personal protective equipment (PPE) provided during performing job*					

~TERIMA KASIH~