SAFETY CLIMATE AMONG RADIOGRAPHERS AT 3 MAJOR HOSPITALS IN SELANGOR

ALAGUMAIL A/P SUBRAMANIAM

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ABSTRACT

The researcher studies safety climate among radiographers at 3 major hospitals in Selangor. The objective of this study is to know the level of safety climate among radiographers according to demographic factors. The overall mean score of safety climate among radiographers is high. In demographic factors the respondent‟s age, gender, marital status, race and experience of the radiographers are used as an independents variables. A total 140 questionnaires were distributed to 3 major hospitals selected. The questionnaires were from modified version of Zohar and Luria‟s 2005. Results of this study show that safety climate were acceptable for radiographer major in demographic factors. This study also recommends that safety management to be implemented in Radiology Department in future as safety is applied in work procedures. Moreover, the safety climate can be improved by giving training, rewards to radiographer, safety facilities in workplace and safety policy applied.

Keywords: Age, Marital Status, Gender, Years of Experience, Race, and Safety Climate.

ABSTRAK

Penyelidik mengkaji iklim keselamatan dalam kalangan Juru X-ray di 3 hospital utama di negeri Selangor. Objektif kajian ini adalah mengetahui tahap iklim keselamatan dalam kalangan Juru X-ray mengikut faktor demografi. Dalam faktor demografi umur responden, jantina, status perkahwinan, bangsa dan pengalaman bekerja digunakan sebagai pembolehubah bebas. Secara keseluruhan mean untuk iklim keselamatan bagi Juru X-ray adalah tinggi. Sebanyak 140 soal selidik telah diedarkan di 3 hospital utama yang dipilih dalam Selangor. Penyelidikan kuantitatif digunakan dimana borang soalselidik diambil daripada pengubahsuaian Zohar dan Luria‟s 2005. Maka, hasil kajian ini menunjukkan bahawa iklim keselamatan tidak mempunyai perbezaan yang signifikan dalam faktor demografi. Kajian ini juga mencadangkan agar pengurusan keselamatan dilaksanakan dalam Jabatan Radiologi pada masa akan datang dan ia juga boleh digunakan sebagai garis panduan dan rujukan. Hasil kajian menunjukkan bahawa iklim keselamatan sesuai diterima dalam kalangan Juru x-ray dalam faktor demografi. Kajian ini juga mencadangkan prosedur serta implementasi kerja seharian seharusnya menggunakan dan mengambil kira faktor-faktor keselamatan. Selain itu, iklim keselamatan dapat diperbaiki dengan memberikan latihan, ganjaran kepada Juru x-ray, serta menyediakan kemudahan keselamatan di tempat kerja dan mengikut polisi keselamatan tempat kerja.

Kata kunci: Umur, Status perkahwinan, Jantina, Bangsa, Pengalaman bekerja dan Iklim keselamatan.

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LIST OF ABBREVIATIONS AND SYMBOLS

Short Forms	Descriptions
ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
DOSH	Department of Occupational Safety Health
IOM	Institute of Medicine
ISO	International Organization for Standardization
MOH	Ministry of Health
NKEA	National Key Economic Areas
OSHA	Occupational Safety and Health Act 1994
SPSS	Statistical Package for the Social Sciences
SEM	Structural equation modelling

CHAPTER 1

INTRODUCTION

1.1 Introduction

This section intends to discover the relationship between the safety climates in radiology department and demography factors in the healthcare industry. Besides, this chapter will discuss and highlight the issues that arise between safety climate and healthcare industry. Furthermore, this chapter will state the background of the study, problem of the statement, the research questions, and research objectives to fulfill the issues of this study. In addition, significance of the study and the chapter layout will display in end of this chapter.

1.2 Background of the Study

The development of service in the healthcare sector is one of the an important economy for the Malaysian. This sector is targeted by the government to develop the competitiveness of the Malaysian economy. In the 10th Malaysia Plan (2011-2015), the Malaysian government has been identified healthcare services as one of the key priority sectors of the 12 NKEA. The significance of this sector is emphasized to meet not only the social aims of quality and standard of healthcare for the society, but also enhanced the economic revenue from the export of health services and medical tourism. The Ministry of Health is the main public agency in charge for the delivery of healthcare in the country (Chee, 1990). However, the structures and procedures used in the organization vary

broadly and there is scope to improve the quality, reliability and safety of care, especially in the healthcare institution.

Risky industries such as aviation and shipping were considering interest to assessing safety factors. Traditionally, their safety procedure has been based on previous data of employee of the victims and injuries. According to Weick (1999) the consciousness in the managerial and human factors is essential rather than just technical failure that will cause of accidents. These risky industries include on the predictive method of safety. A single demanding method of safety is the evaluation of safety climate.

According to Neal and Griffin (2002) stated that the safety climate involve perception of policies, actions and practice involving to safety in the workplace. Thus, these perceptions will influence the employees‟ attitudes, relations and behaviours in terms of safety (Neal & Griffin, 2004) which is related to demographic factors. Safety climate has been extensively researched to improve safety performance at the workplace (Cooper & Phillips, 2004; Glendon & Litherland, 2001).

The term safety climate was define by Zohar (1980) measured the workers‟ perception on a variety aspects of job safety in industrialized organizations with high and low accident rates. In addition, Zohar (1980) stated the safety climate is the digest of perception that workers contribute to regarding their work environment and found that safety climate was related to safety audit scores. According to Natalie et al. (2016) stated that the safety climate are related with safety audit scores. Thus, the safety

climate dimensions are being able to be used to measure an organization‟s competence in identifying and remediating work-related hazards. Therefore, safety climate will be reducing injury and accident in workplace.

The healthcare industry involves high risk for morbidity and humanity, it is considered to be a high hazard industry. Five years ago the Institute of Medicine (IOM) recommended that healthcare organizations have to focus and to improve their patient safety culture (Khan, 1999). The surveys determining patient safety climate in healthcare organizations have begun to emerge. For example the ISO audit and an infection control audit frequently found issue regarding the safety of workers and the environment. Internal and external audit find non comply standard of work will be brought out for top management to look after the issue. In hospitals, the issue in the audit will be discussed with the director of the hospital to overcome the problem and top management will take immediate action to prevent any issue.

Improvement in working conditions and innovations in the method use in the production is not sufficient to get better safety performance because organizational culture and human factors also play critical roles (Zhou et al. 2008). Safety climate practice in the rest of the world is unique due to demographics, legislation and stakeholder‟s contractual agreements. The achievement of a safety, health, and environmental management system is no widespread in developing countries (Koehn et al. 1995). Safety climate determine portray the perception of workers

which are partial by demographic factors such as age, gender, race, year of service (experience), marital status, dependents, etc.

According to Choudhry et al. (2009) found positive effect in the lead perceptions of older workers, who are married, and have family members to support. Compare a little impact upon individuals who are in the youngest age, single, or have no family member to support. In addition, the workers with educational levels below primary had less perception of the safety climate.

1.3 Problem Statement

The physical condition and safety climate are concept that today attracts much interest across a broad number of industries and sectors. According to Clarke (2000) stated that the reason to this is a good quality safety climate is a number of the most significant factors in achieve safe workplaces.

The past researcher in safety climate has been studied in wide industries. For example steel factories (Brown, Willis, & Prussia, 2000; Zohar, 2002), offshore environments (Mearns, Whitaker, & Flin, 2003), and nuclear industry (Harvey, Erdos, Bolman, Cox, Kennedy, & Gregory, 2002). Nevertheless, the concept of safety climate in the health care industry needs further research, since the healthcare sector has several exclusive characteristics that differentiate it from the above industries. More recently; the safety climate has been investigated among researcher as a gauge of the overall strength of an organization‟s safety culture.

Furthermore, the safety climate capacities are be able to be used to proactive measurement in the organization‟s effectiveness in identifying work-related hazards, thereby reducing the number of injury.

Extensive influence has been determined for demographic factors as personal characteristics as age, gender, marital status, race, and working experience in the industry, and other personal information. However, the demographic factors may influence safety climate and therefore will influence individual safety behavior (Hinze, 1997).

However, the partition of occupational role differs very much among occupations such as physicians and nurses. They might be producing a inconsistency of perceptions concerning patient safety. For example in Japan, only Matsubara et al. (2004) formed a safety climate scale for Japanese nurses and conduct a factor analysis concerning their original scale. In addition, the hospitalization is one of the most injury-prone industries worldwide in terms of serious injuries, lost work time, disability, and mortality, and there is great need to improve worker safety (Ahmed et al. 2000; Teo et al. 2005; Choudhry et al. 2009; Kines et al. 2010). Moreover, the safety practices in industries are exclusive due to demographics, legislation and stakeholders, contractual agreements. Therefore, this research has aimed to examine the relationships between safety climate and demographic factors to fill the knowledge gap in the healthcare industry.

1.4 Research Questions

This research paper is crucial for inspect the role the relationship between safety climates and demographic factors in healthcare. There are five research questions in the context of such as follows:

i. What is the overall level of safety climate among radiographer at 3 major hospitals?

ii. Is there any significant difference in safety climate mean among radiographers age?

iii. Is there any significant difference in safety climate mean among radiographers gender?

iv. Is there any significant difference in safety climate mean among radiographers race?

v. Is there any significant difference in safety climate mean among radiographers marital status?

vi. Is there any significant difference in safety climate mean among radiographers in year of service?

1.5 Research Objectives

The objectives of the study are to create the understanding between the safety climate among radiographer and demographic factors in the government hospitals. For that reason, researcher was outline five research questions in the context of such as follows:

vii. To evaluate the overall level of safety climate among radiographer at 3 major hospitals?

i.

ii. To calculate the significant difference in safety climate mean among radiographers age.

iii. To determine the significant difference in safety climate mean among radiographers gender

iv. To calculate the significant difference in safety climate mean among radiographers race

v. To determine the significant difference in safety climate mean among radiographers marital status.

vi. To examine the significant difference in safety climate mean among radiographers years of service.

1.6 Scope of Study

This study focus on safety climate among radiographers in 3 major hospital and focus on demographic factors such as age, gender, race, marital status and years of service. Also, this research will provide information pertaining to injury reduction among radiographers. Data collected will assist radiographers in comprehending safety climate and therefore can be used to create initiatives to address the safety perception in workplace. The findings of this study will make a major contribution to the practical and research aspects. In practice, this model should expand the knowledge of radiographers.

The study focus on the significant difference in safety climate means among radiographers age, gender, race, marital status, and years of service. The study focuses in 3 main hospitals in Selangor which target is radiographers as a focus group. Safety climate application among the

radiographers in hospital has been focus on this research, the practice for safety in healthcare environment will be evaluated in safety at aspects. The area of study will be safety climate on availability of safety practice in hospital and application of safety, health and welfare.

1.7 Limitation of the Study

The research will be conducted over 6 months. Time is major factor of limitation where this only covers 6 months period. If the duration of the study is extended so it might make this research more representative of the actual situation. The limitation of the research availability which the study was conducted in pressure where the researcher was working and doing this research, if given full time by the management of hospital to focus this study will give a better and an excellent results. The respondents was scared to give sincere answer for the questionnaire given, this may due to the fear of the information given may take action if they not fulfill the law (OSHA, 1994).

1.8 Significance of the Study

The meaning of this research is to improve our thoughtful of demographic factors that will affect the safety climate in the radiographer department. The main objective of this research is to become aware of how the five demographic factors will affect the safety climate level. Furthermore, this research is necessary for radiographer department to keep up its safety climate. Besides, the identifying the most significant

demographic factor will give a very clear guideline in the safety culture for radiographer department to put emphasize on security and safety. On top of that, it is helpful for government hospital to set policies regarding the safety climates among radiographer. Through conduct this research, it will assist the government hospital to find out the best solution to improved the security and safety in the radiology department and give the best services to accomplish customers‟ satisfaction.

1.9 Organization of the Thesis

This research covers five chapters which integrated introduction, literature review, data methodology, research results and the final chapter is discussion and conclusion. Chapter 1, researchers will present the general idea of the research background and give details concerning the issues in the problem statement. The research objective, research questions, will be mention and the significance of the research.

Chapter 2 basically discusses the previous study of the research. In this chapter, the discussion the importance of each independent variables and dependent variable will be identified. The literature review obtains from previous research apart from published or un published information to identify the relationship, terms and theories which related to the research. Further, developing conceptual framework was included in this chapter to measure validity of theory formed.

In Chapter 3, the researcher will look into on data and methodology. The researcher is will discuss the selected method in conducted the

research design such as data collection methods, sampling design, research instrument, construct measurement, and statistical data processing.

Chapter 4 is the important element which is used to conduct research result with the computer software support of Statistical Package for Social Science Version 21.0 (SPSS). The researchers will accepted out the outcome base on the data collection via questionnaires form. The result conduct will be summaries in chart and tables to present the outcome for the researcher to interpret the results.

Chapter 5 is the last part of the research proposal which is about discussion and conclusion. The researcher will make a conclusion based on the result and finding get from Chapter 4. In addition, sum up the entire research from Chapter 1 to Chapter 4 and identified the major finding in Chapter 5. Furthermore, the limitation of the study will be discussed on the final component as well as on recommendation for future researchers in conducting research that interrelated to this topic research.

1.10 Chapter Summary

The bottom line of discussion in Chapter 1, the safety climate has played an important role in the service based on the radiographer in the government hospitals. The four selected demographic factors such as gender, age, marital status, and number of years services in which served to maintain the safety climate. In Chapter 2, we will explain further about the four selected demographic factor as a core component by providing more useful theories and framework.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Safety climate has a different definition for each researcher; basically, safety climate is a safety practice which is a part of the organization in complying with safety aspects. Safety climate is an important aspect in complying OSHA 1994. Maslow hierarchy also relates safety as the second basic needs for a human. Health and safety should be considered as the main issue in preventing accidents and diseases in the workplace.

Despite in healthcare medical errors are a common thing in the healthcare sector. Such errors are recorded as an incident report which will be investigated. Prevention measures are taken to avoid such errors in the future. The incident case usually happens, then the case will be recorded as an incident report so the accident can be investigated and prevention took in future to avoid the same thing occur again Overall management commitment in safety is a basic aspect in safety climate which is declared by many researchers. As a result of accidents and injuries, organizations started giving attention to organizational and management impact on safety performance particularly the function of safety climate (Nahrgang, Morgeson & Hofmann, 2007).

Furthermore, safety climate is a part of safety performance in the workplace to achieve the best safety roles and responsibilities among the

employees and employer. Meanwhile, safety climate and safety culture have a different kind of view and aspects in promoting safety at the workplace. Safety climate is more related to the safety practices in an organization which is conducted through safety policies and procedure in the workplace. In healthcare the procedures and policy enacted by occupational safety and health awareness among the employees which will be a role of the safety community to make sure the safety practices take a place in applying safety climate.

Safety climate can be difficult to apply in medical procedures because of risk may be present in every procedure such as an operation of patient have a risk to patient where they life can be safe or not, this why normally the healthcare management will ask to patient family to sign in consent form which they able to take any risk during operation.

Meanwhile, safety climate has an improvement in the management of occupational safety and health at the workplace. Safety in the organization must be a concern to achieve of goal and objectives in the organization. Although some field is not concern about safety, while putting a basic aim in production achievement, when the accidenthappens safety will take place then production also can go down because the cost of accident and expensive to overcome an accident.

2.2 Safety Climate

2.2.1 Definitions of Safety Climate

Safety climate as "a summary of molar perceptions that employees share about their work and environment" (Zohar, 1980). Zohar cited that climate perceptions should be about actual safety practices rather than formally declared safety policies and procedures because only readily observable actions inform employees of behaviors that are likely to be rewarded and supported (Zohar, 2008). In other words, employees develop behavior-outcome expectancies from perceptions of safety"s true priority. Brown and Holmes (1986) define safety climate as set perception or belief held by individual or group about a particular entity.

Meanwhile, Abdullah et al. (2009) claims that safety climate was individual perception of safety related policies, practices, procedures that affect personal well being at work. Wu, Liu and Lu (2007) indicate that safety climate as employees" perception as safety culture in organization ; and perception, which are influenced by the organizational factors and individual factors. Sinclair, Martin, and Sears (2010), define safety climate as "*...workers' shared perceptions about their organization's value for safety as expressed through the organization's safety policies, practices, and procedures".*

Dollard and Mc Ternan (2011) defined a psychosocial safety climate refers to a climate for psychological health and safety. It reflects the balance of concern by management about psychological health productivity.

Glendon and Stanton (2000) demonstrate that organizational climate refers to the perceived quality of an organization‟s internal environment. Flin et al. (2000) defined safety climate as the shared perceptions about safety values, norms, beliefs, practices and procedures. Choudhry et al. (2007) provided the definition that safety climate reflects employees‟ perceptions about the organizations‟ safety management system including policies, practices, and procedures that show how safety is implemented in construction sites environments. Even many of researchers have their own perception about safety climate, however the best safety climate was defined by Zohar (1980) because the definition can be refer anyone.

2.2.2 Dimensions of Safety Climate

Meanwhile, when focusing dimension part in safety climate the researcher has a different and same point of view on their research findings, this is caused by their questionnaire. According to Abdullah et al. (2009), the dimension of safety is referring to management commitment on safety aspects.

Three particular dimensions of safety will be management commitment, job hindrances, and feedback and training. There are more dimensions which content communication, work duties, safety satisfaction, management commitment, errors and incidents, the role of supervisors, training and competence, safety rules, reporting, and supervisor‟s leadership style. Besides demographic of personnel, the questionnaire consisted of the above-listed dimensions

Neal, Griffin, and Hart (2000), with Cheyne, Oliver, Tomas and Cox (2002) also mention there are six dimensions on safety climate which are management commitment, safety communication, safety standards and goals, environmental risk, safety systems and safety knowledge and training. Clissold (2005) found that there are three safety climate factors such as safety management, safety standards , and safety communication.

Meanwhile, Zohar (1980) identified eight dimensions of safety climate factors such as management attitudes, effects of safe conduct on promotion, work pace, and status of safety officers management commitment to safety, return-to-work policies, post-injury administration, and safety training are important dimensions of safety climate.

Moreover, Dedobbeleer and Beland (1991) identified two dimensions of safety climate: management commitment to safety and worker involvement in safety activities. Another potential dimension of safety climate examined in the current study is safety training. This construct measures the effectiveness of formal orientation programs and later follow-up training pertaining to safety practices at work. Safety training has shown significant effects in increasing safety performance in prior research (Cohen & Jensen, 1984; Cooper & Phillips, 2004; Reber & Wallin, 1984; Huang et al. 2006)

Revealed six safety climate dimensions: management safety practices, supervisor safety practices, safety attitude, safety training, job safety, and co-workers‟ safety practices. Logistic regression analysis was used to evaluate the effects of safety climate dimensions on vessel

accidents in respect of crew fatality and vessel failure. Study findings indicated that management safety practices, safety training, and job safety dimensions significantly affect crew fatality incidence, and the job safety dimension has a significant influence on vessel failure six critical safety climate dimensions were identified: "management safety practices," „supervisor safety practices", „safety attitude,", „safety training", „job safety" and „co-workers safety practices". The findings are consistent with those reported in previous studies on safety climate (Zohar, 1980; Flin et al., 1996; Cox & Flin, 1998; Mason & Simpson, 1995; Hayes et al., 1998; Mearns et al., 2003; Lu & Shang, 2005).

Furthermore Qual and Saf (2005) elaborate 4 major dimensions in safety climate such as (1) *leadership characteristics* (eg, leadership styles, such as degree and type of supervision, degree of support and trust, degree of aloofness, and type of leadership hierarchy), (2) *group behaviors and relationships* (eg, characteristics of interpersonal interactions, group behaviors, perceptions of coworker trust, degree of group supportiveness, group cohesion, and coordination of group effort), (3) *communications* (eg, formal and informal mechanisms for transfer of information and for conflict resolution), and (4) *structural attributes of quality of work life* (eg, rewards, working conditions, hours of work, forced overtime, and job security). We also identified the major healthcare-related outcomes, the most common being patient satisfaction, job satisfaction, motivation, work stress, and turnover.

Seven of the nine surveys evaluated five common dimensions of patient safety climate: leadership, policies and procedures, radiographing,

communication, and reporting. Most also addressed other dimensions of patient safety climate (Qual & Saf, 2005)

The findings supported a narrowing set of core dimensions for safety climate- management safety priority, safety management, safety communication, and workgroup safety involvement- as suggested by Seo (2004) among others. The longitudinal design supported the predictive value of safety climate for safety behavior, but again the latter was self-reported so this study could not establish a correlation with actual safety outcomes.

Safety climate by Steven (2004) attributed to not specifying the influence of two critical safety dimensions which is management commitment and supervisor support. Seo et al. (2004) demonstrated the importance of developing psychometrically robust safety climate scales.

Addressing safety climate dimensions specifically construction industry, Glendon and Litherland (2001) found six factors for safety climate in a road construction organization include communication and support, adequacy of procedures, work pressure, personal protective equipment, relationships, and safety rules. Mohamed (2002) has identified 10 dimensions of safety climate in construction site environments include management commitment, communication, safety rules and procedures, supportive environment, supervisory environment, workers‟ involvement, personal risk appreciation, appraisal of work hazards, work pressure, and competence. For Hong Kong construction industry, Fang et al. (2006) evaluated 10 dimensions as safety attitudes and management commitment,

safety consultation and safety training, supervisor‟s role and workmates‟ role, risk-taking behavior, safety resources, appraisal of safety procedure and work risk, improper safety procedure, worker‟s involvement, workmate‟s influence, and competence and Choudhry et al. (2009) reduced these factors to two as management commitment and employees involvement, and inappropriate safety procedures and work practices.

Two dimensions of safety climate that are commonly identified in the literature are employees‟ perceptions of the safety practices of their immediate supervisor, and employees‟ perceptions of the general priority assigned within their organizational unit to the issue of safety (Hofmann &Stetzer, 1998; Zohar, 2002). Two additional dimensions that are based on the way employees perceive two main initiatives that organizations commonly take in order to improve safety performance. These initiatives are the implementation of formal safety procedures and the dissemination of information about safety to employees (Naveh, Katz-Navon, & Stern, 2005; OHSAS 18001, 1999).

Dimension 1 Safety procedures. Safety procedures as a dimension of safety climate refer to employees‟ shared perceptions of the level of detail in an organization‟s safety procedures. Procedures‟ level of detail refers to the extent to which employees perceive the volume and detail of procedures to be extensive, and whether procedures relate to all work issues.

Dimension 2: Safety information flow. The second dimension of safety climate refers to how employees perceive the amount of information they receive through routine circulation of safety information and training. The formal flow of safety information within an organization deals with delivery of several types of information to the employees, such as information about unusual events and potentially hazardous conditions, and safety training sessions (OHSAS 18001, 1999). The dissemination of safety information to employees constitutes an organization‟s planned effort to improve employees‟ current and future safety performance by increasing their capabilities for and redirecting their attention toward safety (Baldridge, 2003; Ford, Salas, Kozlowski, Kraiger, & Teachout, 1994).

Dimension 3: Perceived managerial safety practices. The third dimension refers to employees‟ perception of their supervisors‟ safety-related activities and methods (Flin, Mearns, O‟Connor, & Bryden, 2000; Zohar, 2002). Managerial practices express to employees the extent to which their supervisor is committed to safety. Supervisors set the tone and tempo for safety by, for example, emphasizing specific safety behaviors while overlooking others. In units where employees work for a supervisor who is committed to safety, this dimension of safety climate is high (Cheyne, Cox, Oliver, & Thomas, 1998; Hofmann & Stetzer, 1998). Several studies have pointed to the positive impact on the safety performance of supervisor safety practices that emphasize safety (Barling, Loughlin, &Kelloway, 2002; Thompson, Hilton, & Witt, 1998; Zohar, 2002).

Dimension 4: The priority of safety. The fourth dimension of safety climate is the degree of priority assigned to safety within an organizational unit. It refers to employee expectations and daily behaviors regarding the balance maintained among work pace, workload, and pressures for productivity and safety (Zohar, 2000).

However, Lu and Shang (2005) empirically evaluated the crucial dimensions of safety climate from a container terminal operator‟s perspective. Results indicated that safety training and management oriented terminal operators had the best safety performance, followed by safety management oriented terminal operators, job safety and supervisor safety oriented terminal operators and co-workers‟ safety oriented terminal operators. Lu and Shang‟s (2005) exploratory study employed factor and cluster analyses, whereas this present research of thesis is a causal evaluation using CFA and the SEM approach. It aims to investigate the impact of three sets of antecedent factors, namely supervisor safety, safety training, and co-worker safety, on safety performance in container operation terminals, thus differs from Lu and Shang‟s (2005) study about the supervisor safety management dimension of safety climate has a positive effect on safety performance in container terminal operations.

Other than that Vinodkumar and Bhasi (2010) cited a number of safety climate dimensions have been identified. These include material factors (plant design, production equipment, personal protective equipment), policies: practices (safety priorities, training, enforcement, daily routines, housekeeping), safety-related conditions (work stress, social relations with co-workers), and the level of concern and action by

different people in the workplace (management, supervisors, safety specialists, government inspectors, safety committees, and workers in general).

This study considered company safety concern, senior managers‟ safety concern, work pressure and supervisors‟ attitude towards safety as the dimensions of safety climate. It is evident from these studies that the choice of safety climate dimensions can partially be determined by practical interest (Huang et al., 2006). According to Zohar's (1980) eight dimensions covered the contents of the four categories proposed by Guldenmund (2000). The eight dimensions consisted of the importance of safety training programs, management's attitude toward safety, effects of safe conduct on promotion, level of risk at the workplace, effects of required work pace on safety, the status of safety officer, effects of safe conduct on social status, and status of the safety committee.

Nevertheless, the dimensions in the follow-up studies were less comprehensive. For example, the study by Brown and Holmes (1986) only included dimensions regarding hardware and people, such as employee perception of how concerned -management is with well-being, employee perception of how active management is in responding to this concern, and employee physical risk perception. In addition, the study by Dedobbeleer and Beland (1991) only included dimensions of people and behavior, such as management's commitment to safety and worker's involvement in safety.

Additionally, the dimensions included in the study by Coyle et al. (1995) were seven, including maintenance and management issues, company policy, accountability, training and management issues, work environment, policy/procedure, and personal authority. These seven dimensions could be categorized into the dimensions of hardware, software, and people, but with the absence of the behavior dimension. The studies (Diaz & Cabrera, 1997; Hayes et al., 1998; Varonen & Mattila, 2000; Williamson et al., 1997) either left out the dimension of people or missed the substance of behavior or hardware. Therefore, to provide comprehensive dimensions of safety climate, this study includes all four categories (i.e., hardware, software, people, and behavior). The operational definition of the climate in this study refers to the scores measured from the following five dimensions: chief executive officer's safety commitment and action, manager's safety commitment and action, employee's safety commitment, perceived risk, and emergency response. To be precise, executive officer's safety commitment and action, and manager's safety commitment and action belong to the dimension of people; employee's safety commitment belongs to the abstract facet of behavior dimension; perceived risk falls on the realm of hardware; emergency response is on the safety procedure of the software (Wu et al., 2007). In the hypothesizing dimension of safety climate,it must be included by discovering of employees.

2.2.3 Instruments and Measurements of Safety Climate

Most of the previous research, not the specified instrument used for their research only a few identify clearly. These researches basically take a previous questionnaire by Zohar and Luria‟s (2012). The questionnaire was given among the radiographers in 3 major hospitals in Selangor. There were 140 medical radiographers working in 3 hospitals from that we choose all the radiographer as a sample for the research. A survey of safety climate in hospitals among the radiographer to evaluate safety practices conducts in clinical application. The questionnaire was adapted from a modified version of Zohar and Luria‟s (2005). These questionnaires have been modified according to medical fields. Moreover, the questionnaire has been given English and Bahasa Malaysia to the target sample. It was taken 2 weeks to collect back from the respondents which are radiographer in hospitals. The questionnaire analysis of the organizational safety climate and demographic factors among radiographers in 3 major hospital. The questions were accompanied by 7 points Likert rating scale. An instrument created as a guide for safety to do a pilot study for each sample considering safety practices, management commitment, supervisor role, workplace pressure, risks, and competence.

A survey approach was employed as it is the most common techniques to evaluate safety-critical factors and participants remain anonymous (Kho,Carbone, Lucas, & Cook, 2005; von Thaden et al., 2003). The questionnaire was adapted from the Safety Climate Assessment tool developed by Flin, Mearns, & Burns (2004) from the University of Aberdeen. The scale was modified slightly by replacing the original term “patient safety” with “health and safety”. The questionnaire

was intended to identify perceptions on the implications of safety climate dimensions towards their OHS performance in the public healthcare in Malaysia.

From Fishbein and Ajzen (1975) book on Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research, Page Bucci (2003) noted that "Attitude is an important concept that is often used to understand and predict people's reaction to an object or change and how behaviour can be influenced". Back-translation and decentering methods were used in this survey. The original dimensions, which were groups into the following subsections: communication, work duties, safety satisfaction, management commitment, errors and incidents, the role of supervisors, training and competence, safety rules, reporting, and supervisor"s leadership style. Besides demographic of personnel, the questionnaire consisted of the above-listed dimensions. The items were accompanied by a 7-point Likert rating scale. The original scale as in Table 2 was a pilot test to 52 respondents from a district hospital; in Selangor. Content validity was also examined to ensure that each item really explains the meanings comprise in the concept (Hair et al., 1998). Ten safety experts: seven practitioners from various industries and three academicians from the public university evaluated the items and its suitability in each dimension. Negatively-worded items were reverse-scored to achieve a higher score that gives a positive answer. Individual scale scoring was computed by summing the item scores and dividing by the total number of items. The factors such as safety communication, safety responsibility, work duties, safety satisfaction, management

commitment, health and safety goals, errors and incidents, the role of supervisors, training and competence, safety rules, reporting, and supervisor‟s leadership style have a biggest important role. (Abdullah et al., 2009)

2.3 Demographic Factors and Safety Climate

Safety climate has relations with the demographics of workers such as age, gender, race, marital status, and years of experience. Many researchers have they own findings for demographic factors.

2.3.1 Age and Safety Climate

Meanwhile, Stoilkovska, Panconvska and Mijoski (2015) research found that the degree to which construction sector employees perceive that safety is important in their organizations/sites and how job satisfaction affects these perceptions when age is introduced as a moderator variable. Two-way analysis of variance demonstrated that job satisfaction has a strong effect on perceived management commitment to worksafely and that this relationship was moderated by respondents' age. Job satisfaction was associated with perceived accident rate and safety inspection frequency, but the proposed role of age in this linkage was not confirmed. Consequently, the findings indicated that by increasing the level of job satisfaction, perceptions of these safety climate aspects proved to be more positive. The conclusion is that these relationships could further lead to a lower percentage of accidents and injuries in the workplace and better

health among employees. A significant relationship between job satisfaction, age and perceived co-workers' commitment to work safety was not found. Nelson study found that males, ages 18-24, both white and black, and with less than a college education were most likely to report unsafe behaviors (Nelson et al., 1998).

2.3.2 Gender and Safety Climate

For gender, the Seth and Salminen (2011) found that as anticipated, gender differences were apparent on all variables: female workers had favorable perceptions of workplace safety more often than their male counterparts. They were more compliant with safety management procedures and had a lower accident involvement rate. Marital status changes were incorporated in further analyses to assess the impact of the presence of a spouse on the gender effect. Differences on all eight variables were not of statistical significance. From a practical perspective, exploring the impact of demographical factors such as gender, on safety perception and accident frequency provides useful information for organizations and management on the need for special safety programs for particular groups, based on their demography (Seth & Salminen, 2011).

2.3.3 Marital status and Safety Climate

Fung et al. (2006) stated that there was a significant relationship between marital status and perception on safety climate. In addition,

Choudry et al. (2009) reported that safety climate employed positive effects upon insights among married workers. The attitude of single workers towards safety will change once they were married since there are family members to be supported Fung et al. (2006). Injuries and accidents need to be avoided also safety while working will be their priority. It is expected that responsibility for family and parenthood might encourage meticulousness, risk aversion, and workplace safety behavior, and result in a decrease in accident involvement among married men (Gyekye & Selminen 2000).

Mahabadi et al. (2016) found that there is a significant association between marital status and regulations and safety instructions. Married people seem to focus more on rules and regulations in the workplace. Porter el al. (2006) claims that interestingly, being divorced (using „single" as the reference marital status) was an independent, positive predictor of patient safety climate, with age trending toward significance.

2.3.4 Race and Safety Climate

Race and ethnicity is a construct for classifying people with similar biological, social, and cultural heritage into four race groups (White, Black, American Indian/Alaska Native, and Asian/Pacific Islander) and one ethnicity group (Hispanic or Latino). Dong et al. (2009) has revealed that the White were less likely had injuries as compared to their Hispanic counter parts in the construction sites. It was also reported that fatal injuries among Hispanic workers who were born in the United States were lower as compared to the Hispanic whose were not born in the United

States (Dong et al. 2009). In another study by Thomas et al. (2012) recorded that Latino construction workers who work in the residential area involved in a high proportions of occupational injury and casualty. According to study by Kermode et al. (2005) compliance towards universal precautions among health care workers among north Indian also is needed in order to improve their understanding and knowledge on the safety climate. These studies have concluded that attention should be given to safety climate in order to improve the safety among workers particularly. Hence a better training, intervention and prevention measures must be applied to all risky workers regardless of races.

2.3.5 Years of Service and Safety Climate

In a safety climate study conducted by Cooper and Phillips (2004), these researchers did detect significance in how respondents replied to the safety climate constructs based on age and years of experience (Cooper & Phillips, 2004). Yet another study conducted by Chi et al. (2005) looked at construction site accidents utilizing similar demographic variables of age, gender, and years of work experience. They concluded that gender and age could make a difference in perceptions of safety behavior (Chi et al., 2005). However, they also noted that female workers and older age groups are a much smaller proportion of the construction site workforce as expected (Chi et al., 2005).

Other research has also shown that in the self-reporting of safe behaviors, there is greater risk-taking in males in younger age groups but

that the gender gap diminishes with age (Byrnes et al., 1999). Literature also indicates that age, gender, and work experience can have effects on safe work behaviors over and above those constructs of which the safety climate model is comprised (Brown et al., 2000). Based on the strong relationship between safety climate and safety behaviors, construction companies in Louisiana should address the role of management‟s influence on company safety climate. This supports earlier findings from previous studies that safety climate can be used as an effective indicator of a company‟s safety practices (Teo & Feng , 2009). Experienced workers indicated the best perceptions of safety, expressed the highest level of job satisfaction, were the most compliant with safety procedures and recorded the lowest accident frequency. From a practical perspective, analyzing differences in work experience in relation to safety perceptions could be useful for organizations as the workers' experience could indicate a need for special safety programmes for particular groups.

2.6 Conclusion

In healthcare the commitments to health and safety legislation and its policy is compulsory. The top management must have a strong establishment to develop the good practices of safety climate which can have positive safety behaviors. Other than that in Healthcare promoting a healthy workplace and work practices are still content in work procedure and policy but the employees always failure to comply and ignore it. It also to be taken into the account that employee‟s interpretations of safety,

health, and the environment in the workplace is necessary. Finally, the safety climate actually is a safety behavior, safety ethic, feelings, and norms which content in our daily life.

The management commitment is a basic dimension in safety climate which all of the previous researchers mention. The second will be personal competence during procedure clinical in Healthcare. Many healthcare encourages the employer and employees to take a serious action to maintain management towards safety. Lack of safety training can be because safety practices not been applying then unsafe practices, beliefs will take place in organizations. Thus the policy, procedure, and practices are often to be analyzed so the situation and people attitudes can be changed relevant to the policy. Reviews of literature suggest that safety climate must be practiced in the workplace even though it‟s difficult sometimes. Understanding of safety climate can identify implication on strategy, solutions, and policy towards safety.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes about the research framework, hypotheses, research design, operational definition, instrumentation, data collection, population, sampling, data collection procedures and technique of data analysis. The purpose of the research methodology is to elaborate how data will be collected from the respondents and method to be use for collecting the data. It is an important to produce a quality paper work.

3.2 Research Framework

Hayes et al. (1998) found that study measuring perceptions of workplace safety development to ensure that industrial accident can be prevented.

Research Framework

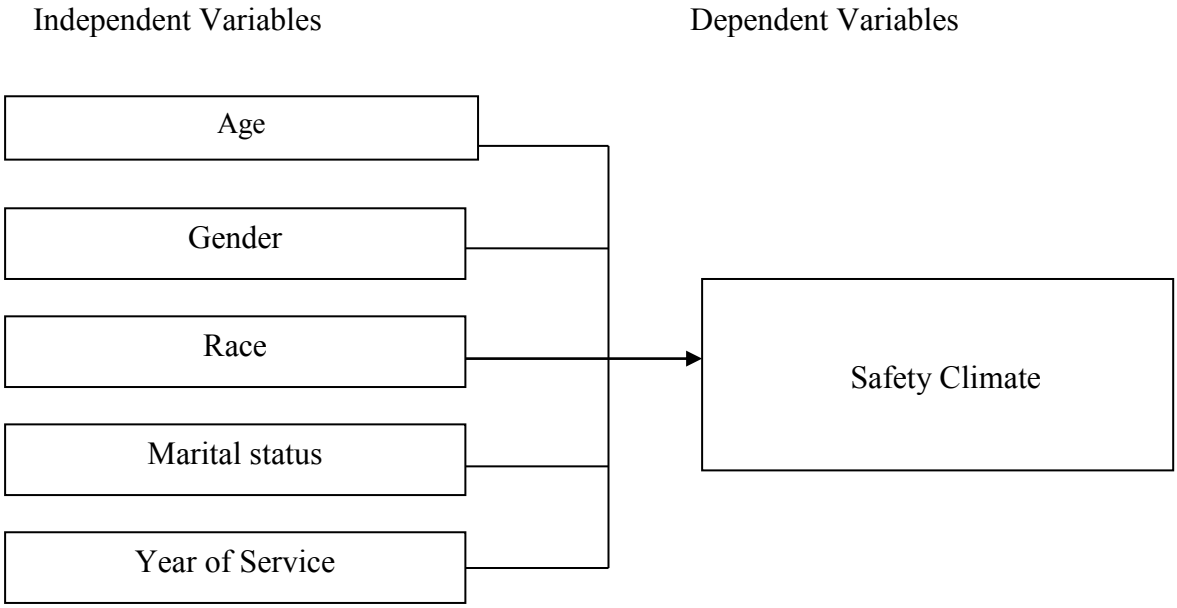

Figure 3.1
Research Framework

Safety Climate

The term safety compliance is used to describe the core activities that need to be carried out by individuals to maintain workplace safety. These behaviours include adhering to standard work procedures and wearing personal protective equipment (Neal & Griffin, 2000).

3.3 Research Hypothesis

3.3.1 Hypothesis 1

In a study by Siu and Phillips (2003), it was reported that the work-related incidents were associated to age in a curvilinear way which initially injuries will increasing with age and eventually decline. It was proved that respondents will give more attention on safety as their age increasing. Contrarily, the Swedish workers aged 45 and above were found to be experienced injury while on duty and resulted in more time

away from work due to the injuries at work as compared to their younger counter parts (Kemmlert et al. 2001).

Siu et al. (2001) mentioned that the Western and Asian population was well established with age related and personnel‟s work safety. Generally Siu et al. (2003) concluded that older workers incline to adjust to work. Age and employee susceptibility towards illness and injury has become even more important due to the fewer research on age differences in safety attitudes (Topf, 2000). Therefore, older or aged radiographers have more safety application in workplace. Therefore:

H1 the older radiographers have higher safety climate compare a young radiographer.

3.3.2 Hypothesis 2

Harris and Jenkins (2006) recorded that males were prone to ignore safety procedures and voluntarily engaged in risky behaviors more often as compared to females. A study by Siu et al. (2000) recorded that there were differences in anticipation of safety scale between male and female workers. It is shown that female workers were more likely to have positive attitudes on towards safety at work. Further investigations by Milijic et al. (2014) found that gender of the worker‟s was significantly influence perception on the safety climate. Therefore:

H2 the female radiographers have higher safety climate than that of male radiographer.

3.3.3 Hypothesis 3

Dong et al. (2009) has revealed that the White were less likely had injuries as compared to their Hispanic counter parts in the construction sites. It was also reported that fatal injuries among Hispanic workers who were born in the United States were lower as compared to the Hispanic whose were not born in the United States (Dong et al. 2009). In another study by Thomas et al. (2012) recorded that Latino construction workers who work in the residential area involved in a high proportions of occupational injury and casualty. According to study by Kermode et al. (2005) compliance towards Universal Precautions among health care workers among north Indian also is needed in order to improve their understanding and knowledge on the safety climate. These studies have concluded that attention should be given to safety climate in order to improve the safety among workers particularly. Hence a better training, intervention and prevention measures must be applied to all risky workers regardless of races. Therefore:

H3 the Malay radiographers have a higher participation in safety climate in workplace compare Chinese and Indian , this due to a Malay race is majority race among radiographers.

3.3.4 Hypothesis 4

Fung et al. (2006) stated that there was a significant relationship between marital status and perception on safety climate. In addition, Choudry et al. (2009) reported that safety climate employed positive

effects upon insights among married workers. The attitude of single workers towards safety will change once they were married since there are family members to be supported Fung et al. (2006).

It is expected that responsibility for family and parenthood might encourage meticulousness, risk aversion, and workplace safety behavior, and result in a decrease in accident involvement among married men (Gyekye & Selminen 2000). Therefore the participation of safety climate among married radiographers was expected to be higher. Therefore:

H4 the married radiographers have a high safety climate in workplace compare unmarried, this because of the unmarried woman lack of safety behavior in workplace.

3.3.5 Hypothesis 5

According to Stalnaker (1998) stated that experienced workers have a greater knowledge on the job and well equipped with skills thus reporting to lower accident rate. Study by Hon et al. (2014) reported that workers are prone to perform by experience rather than safety rules and regulations since they have longer service durations. According to Lyu et al. (2014) workers with longer years of service were less likely to encourage them to contribute voluntarily in safety activities although it was found that safety compliance level were increased as to their positive safety climate. Therefore:

H5 the most experience radiographers have high safety climate.

3.4 Research Design

Safety in healthcare is really important to prevent accident and error in medical services which can be a danger to the patients and radiographer. For this study, research design is descriptive design. In this research, the target group among the radiographer is analysis periodically to get the best finding in safety climate application among them. The study on safety climate among the radiographers in hospitals is not easy to tackle. To do this research first, identify research design based on the problem statement.

This study focus on the safety climate which more seen in safety practices among the radiographers doing they task daily in the Radiology Department in hospital. Even though radiographers have many problems in practicing safety climate because they run on time and not have time to practice daily and it is also should clearly identify overall the problem happen. Normally the hygiene level always fails when they touch one patient and without wash hand or use hand sanitizer to touch another patient. This is one of agenda the infection control fail and safety climate in safe practice failure in working procedures. The study evaluates the safety climate of radiographer on safety practice for compliance with the preparation of the safety policy, safe work task, safety commitment, and safety. It also focuses on the radiographer commitment in handling safety practice. Safe practice of clinical work task in safety climate aspects will be determined based on factors on clinical task, operation task, diagnostic procedure, and the lab pathology safe manner in handling patients and working environment.

This study is hypothesis testing research to find the answer to the question based on the research and perceptions of radiographers. According to Aquino (1971) descriptive research is fact-finding with adequate interpretation. The descriptive method is something more and beyond just data gathering; the latter is not reflective thinking or research. The true meaning of the data collected should be reported from the point of view of the objectives and the basic assumption of the safety climate.

This descriptive research divided into two basic classifications which are cross-sectional studies and longitudinal studies. For these research cross-sectional studies is basically used to measure units from a sample of the population radiographers in healthcare at the only time. It is not longitudinal studies because the data collection is not repeated in every time. The sample of surveys for cross-sectional studies is representative of the specific population so in this research radiographers are the main sample to research.

This describes phenomena as they exist. It is used to identify and obtain information on the characteristics of a particular issue. The data collected are often quantitative, and statistical techniques are usually used to summarize the information. Descriptive research goes further than exploratory research in examining a problem since it is undertaken to be certain of and to describe the characteristics of the issue. A research investigation may include descriptive research, but it is likely that it will also include one of the following two types (explanatory or predictive) as you are required in to go beyond description and to explain or predict.

This kind of research is used principally to gain a deeper understanding of safety climate in healthcare. The knowledge and understanding of safety climate must be detail. The study used to clarify problem and hypotheses. To conduct this research a variety of method was chosen such as case analysis by audit compliance, experience surveys, focus group and secondary data analysis. A quantitative approach was applied in this study because of the nature of the survey process that was customized to focus on data measurement, with the use of a questionnaire. Theresearch uses the questionnaire given to the respondent to gather the information needed for the studies. The respondent for the research will be the radiographer in hospital. The questionnaire was distributed by hand to the respondents.

Prior to that, the questionnaire was tested for reliability by conducting a pilot test. 2 weeks period was allocated for respondents to return back the questionnaire then data will be analyzed using SPSS. The sample t-test used to identify the significant difference in variable means. The questionnaire given 20 to 30 minutes for respondents to answer, it contains 12 question used Likert Scale. The primary data for this research will be base on the questionnaire and secondary data will be base on journal, books, publication, observations and internet data. Some of the question related to safety climate application in clinic environment, organizational safety climate, supervisors‟ descriptive safety norms, supervisors‟ injunctive safety norms, co-workers‟ descriptive safety norms, co-workers‟ injunctive safety norms, attitudes toward safety,

perceived control, proactive safety behaviour and compliance to rearrange back to suit the research objectives.

Other than that, the researcher has chances to go visit the hospital to do observation which has accurate data for the research and also researcher able to monitor, assist and explain the studies. In conclusion, the researcher used this technique in research methodology to finds the objective of this studies and achieve the best research in Occupational Safety and Health in the medical field. By conducting this research will give a contribution to Healthcare as guidelines that can be used and this also make the radiographers to be more aware and practice safety in the clinical task.

3.5 Operational Definition

Safety climate is defined as "a summary of molar perceptions that employees share about their work and environment" (Zohar, 1980).

Clara (2006) defined demographic as a study of human populations with emphasises on the statistical analysis of the quantities and characteristics of the people who live in a particular area, especially in relation to their age, race, gender, year of service, and marital status.

3.6 Measurement of Variables

Most of the previous research, not the specified instrument used for their research only a few identify clearly. These researches basically

take a previous questionnaire by Zohar (2012). The questionnaire was given among the radiographers in 3 main hospitals in Selangor. There were 140 radiographers in 3 hospitals. A survey of safety climate among radiographers in the hospital to evaluate safety practices conduct in clinical application. These questionnaires have been modified a bit according to medical fields.

Moreover the questionnaire the have been given English and Bahasa Malaysia to the target sample. It was taken 3 weeks to collect back from the respondents which are radiographers. Overall the questionnaire analysis about the organizational safety climate, proactive safety behavior and compliance safety behavior work pressure, will analysis in this research. The questions were accompanied by 7 points Likert rating scale. An instrument created as a guide for safety to do a pilot study for each sample considering safety practices, management commitment, supervisor role, workplace pressure, risks, and competence.

3.7 Data Collection

In this research data collection for quantitative research is conducted by questionnaire and observation also done when a researcher working as a radiographer in Hospital Serdang, Hospital Kajang and Hospital Klang. Ojanen et al. (1988) argue that the only way to measure the safety climate is by surveys. A questionnaire survey has been conducted in 3 hospitals. This survey has taken about two months to give and collect data in a hospital. These research measure safety climates in a

few ways such as management commitment, safety training and safety practice among radiographer.

There was an average of more than 140 radiographers working in 3 hospitals as a sample of respondents and all the respondents have taken as a sample to avoid the problem bias, observation is also conducted. There were 140 sets of questionnaire distributed but only 138 respondents filled the questionnaire under radiographers monitoring. The overall response of radiographers in the hospital for the survey is appreciated even though no obligation from by anyone being forced to answer. The interpersonal of radiographers working condition is the focus as safety climate dimensions.

Others included separate measures for radiographers in top management to be measure about safety climate perception. Overall data collected and analyzed Likert types scales and this easier compare qualitative techniques. Observation doing for more to understand the situation, target behaviors in a focus group which is radiographers.

3.8 Population

The population for the study conducted in 3 major hospitals in Selangor which population of radiographers is 500, from that it was selected 140 as sample according to Krejcie & Morgan table (1970). There were 140 questionnaires will distributed to radiographers in 3 hospital selected.

Table 3.1

Sample size determination based on population (Krejcie and Morgan, 1970)

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

In 3 hospitals there were 140 radiographers and the research target all the respondents should answer the questionnaire.

3.9 Sampling

A questionnaire survey was given to 140 radiographers and the result of the questionnaire overall has been analysis in SPSS representing the safety climate issue only. In conducting this research a simple random sampling is chosen because of larger numbers of radiographers working in hospitals. The target group will be radiographers and study population selected randomly. The sampling in this research found from the administration of 3 hospitals giving information such as a number of radiographers working there. Respondents were randomly selected from the list of radiographers given by the administration. The quantitative data collected was analyzed by statistical techniques adopted previously such

as factor analysis and multiple regressions to evaluate the essential factors affecting safety climate and its impact on safety performance (Fang et al., 2006; Choudhry et al., 2009). SPSS version 22 has been used for statistical analysis. Lee (1998) found significant differences in safety climate scores by organizational level.

3.10 Techniques of Data Analysis

In quantitative research involve statistical models which explain safety climate factors and data has been analysed. The research findings can be in a larger population to be analysis but the direct comparison can be made invalid sampling and significance technique has been used which involved the focus group among radiographers. The quantitative analysis allows exploring and discovering the phenomena of radiographer behavior in working. Data used to analyze the answer, test hypotheses or disprove theories, the data analyzed using SPSS the result use to make graph, inferential technique included the use and test value which is t-test and ANOVA.

3.11 Conclusion

In conclusion, this research is the quantitative type which data collection took a time to collect back. It discuss about research design, research framework, data collection procedures and the list of hypotheses used for the study.

CHAPTER 4

RESEARCH FINDINGS

4.1 Introduction

This chapter will be discussing findings of safety climate among radiographer in 3 hospitals in Selangor. SPSS Version 22 is chosen to analyze the data from the findings, in fulfilled the objectives of the research; this chapter will be a focus on three main description which is a description of the study, descriptive statistic of variables, and hypotheses testing.

4.2 Reliability Test for Safety Climate

Cronbach‟s alpha is a reliability test in SPSS to measure the internal consistency, it used by using survey and questionnaire when questionnaire using a Likert scale, therefore the scale test reliable or not. In other words, the reliability of many given measurement refers to the extent to which it is a consistent measure of a concept, and Cronbach‟s alpha is one way of measuring the strength of that consistency. Cronbach‟s alpha describes the finding value using the rule of thumb. A rule of thumb is used for interpreting alpha using a Likert scale.

A commonly accepted rule of thumb for describing internal consistency is as follows:

Table 4 .1
Rule of Thumb in Cronbach's Alpha

Cronbach's alpha	Internal consistency
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Good
0.8 > α ≥ 0.7	Acceptable
0.7 > α ≥ 0.6	Questionable
0.6 > α ≥ 0.5	Poor
0.5 > α	Unacceptable

According to the rule of thumb in Cronbach's alpha measurement, the research is divided into many categories which is 0.9 and above result is an excellent, 0.9 until 0.8 good, 0.8-0.7 is acceptable, 0.7-0.6 is questionable, 0.6-0.5 poor, 0.5 and below unacceptable. Since the value of Cronbach"s alpha is more than 0.6, the instrument is considered as reliable to measure the variable and this result dependable.

Table 4.2 (a)
Reliability Statistics

Cronbach's Alpha	N of Items
.925	6

Reliability statistics in table 4.2(b) show safety climate results among radiographers examine using 6 items and Cronbach's alpha is 0.925 is an excellent resultaccording to the rule of thumb guide. According to the rule of thumb in Cronbach's alpha measurement, the research is divided into many categories which are good results. Since the value of Cronbach"s Alpha is more than 0.6, the instrument is considered as reliable to measure the variable and this result dependable.

The number of items tested is listed below:

Table 4.2 (b)
List of the items safety climate

No	Item
1	Provides all the equipment needed to do the job safely.
2	Quickly corrects any safety hazard even if it is costly.
3	Considers a person‟s safety behavior when there are promotions.
4	Invests a lot of time and money in safety training for workers.
5	Listens carefully to workers‟ ideas about improving safety.
6	Gives safety personnel the power they need to do their job.

4.3 Normality Analysis

The sample size distribution is determined by the normality test. The main function of this test is, it will give us a clear picture of samples and where does it fall whether an appropriate range and its skewness. The parametric technique will use for the sample that normality distributed otherwise, the non- parametric technique is used for samples that not normally distributed. Normality test is a statistical process is used to size the samples normal distribution and it can be done either mathematically or graphically. For abnormal distribution, the skewness will determine a level of asymmetry in a normal curve. Hence, if the skewness is 0, then the distribution of data is normal. Skewness can also have positive and negative value depends on its direction. To simplify it, we can determine the skewness with the value as follows:

Table 4.3
Value of skewness and definition

Value of skewness	Definition of skewness
Skewness =0	Symmetry of normal distribution
Skewness >1 or skewness <-1	Highly skewed
-1 <skewness<-0.5	Moderately skewed
1<skewness<0.5	Moderately skewed
-0.5<skewness<0.5	Approximately symmetrical

4.4 Skewness and Kurtosis

Kurtosis is determined by the height and sharpness of central peak. The value of kurtosis that is accepted is fallen within +-2 to show distribution is normal.

Table 4.4
Skewness and Kurtosis for Mean Safety Climate

	meanSC
Skewness	-.760
Kurtosis	-.096

Since the value of skewness and kurtosis is between -2 and +2, the data are normally distributed. Skewness mean for safety climate -.760 and kurtosis -.096 meanwhile mean for safety behavior -.946, .941 respectively.

4.5 Descriptive Analysis

In this research the questionnaire was given to radiographers in 3 hospitals selected in Selangor, 140 questionnaireswere given and collected

98% by the cooperation of radiographers. There was no missing data in collecting data. The objective of this descriptive analysis is to know the respondents demographic

The descriptive statistic is mainly used to represent a basic feature of the data in the study. These analyses give a summaryof the sample and measure used in the studies which analyze safety climate and safety behavior among radiographers. Research also focuses on the level safety climate and safety behavior of radiographer in daily task.

Table 4.5
Demographic Profile of the Respondents

Variable	Category	Frequency, N	Percentage (%)
Gender	Male	44	31.9
	Female	94	68.1
Age	20-30	58	42.0
	31-40	70	50.7
	41-50	6	4.3
	51-60	4	2.9
Race	Malay	113	81.9
	Chinese	5	3.6
	Indian	16	11.6
	Others	4	2.9
Marital Status	Single	39	28.3
	Married	99	71.7
Years of Service	5-10 years	38	27.5
	11-20 years	64	46.4
	21-30 years	28	20.3
	31-40 years	6	4.3
	More than 40 years	2	1.4
Hospital	Serdang	50	36.2
	Kajang	26	18.8
	Klang	62	44.9

In this part, the respondent's background information analyzed such as age, gender, race, marital status, and years of service and Hospital

involved in this research. Table 4.5 shows the analysis about demographics of the radiographer working in a hospital. Population target is 140 respondents from 3 hospitals selected in Selangor.

4.5.1 Age

According to the age of respondents is categories age group 20-30, 31-40, 41-50, and finally 51-60 year old, the majority of respondents from the group 31-40 years with 70 (50.7%). Then followed by 20-30 year around 58 (42%), 41-50 in 6 respondents (4.3%) and minority 51-60 is 4 respondents or 2.9% only

4.5.2 Gender

For this research, there is two category of gender which is male and female. Male is 44 radiographer (31.9%) while the female is the majority of gender about 94 (68.1%). The female radiographer is a domain in this field because radiographer job dealing with the privacy of the patient.

4.5.3 Race

In Malaysia, there were four main categories of the race which is Malay, Chinese, Indian and others. The higher respondents is Malay respondents 113 (81.9%) , Chinese 5(3.6%) , Indian 16 (11.6%) , and others is minority group only 4 respondents (2.9%).

4.5.4 Marital Status

In this study the single respondents are 39 and married is 99 higher respondents which represent 28.3% and 71.7% respectively.

4.5.5 Year of service

The year of service of radiographer is 5-10 years, 11-20 years, 21-30 years, 31-40 years and more than 40 years. The highest respondents from 11 to 20 years of service contributing about 46.4% (64 respondents), The others years of service 5-10, 21-30, 31-40 and more than 40 years are the minority with 27.5% (38 respondents), 20.3% (28 respondents), 4.3% (6 respondents) and 1.4% (2 respondents), respectively.

4.5.6 Hospital

There are 3 major hospital in Selangor selected which is Hospital Serdang, Hospital Kajang,and Hospital Klang. The majority respondents from Klang 62 (44.9%) respondents, followed Serdang 50 (36.2%) and Kajang is minority respondents only 26 (18.8%) respondents.

4.5.7 Level of safety climate

The level of safety climate among the radiographers overall is used to measure the value of standard deviation in descriptive statistics. Standard deviation is the measure of dispersion of set data from its mean. The radiographers overall satisfied and has a strong level.

Table 4.6
Level of Safety Climate

	N	Minimum	Maximum	Mean	Std. Deviation
MeanSC	138	1.67	7.00	4.9022	1.16653
Valid N (listwise)	138				

The minimum value of safety climate is 1.67 while SD is 1.16653 and Mean is 4.9022 which respondents slightly agree near to Likert scale 5.

4.6 Inferential Analysis

Another test is the *t*-test is one type of inferential statistics. It is used to determine whether there is a significant difference between the means of two groups. With all inferential statistics, we assume the dependent variable fits a normal distribution. When we assume a normal distribution exists, we can identify the probability of a particular outcome. We specify the level of probability (alpha level, level of significance, p) we are willing to accept before we collect data ($p < .05$ is a common value that is used). Moreover, an ANOVA test is a way to find out if a survey or experiment results are significant. In other words, they help you to figure out if you need to reject the null hypothesis or accept the alternate hypothesis.

4.6.1 Age and Safety Climate

H1 the older radiographer have higher safety climate compare a young radiographer.

Table 4.7(a)
Age Status: ANOVA Statistics

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.731	3	1.910	1.417	.241
Within Groups	180.698	134	1.348		
Total	186.429	137			

The ANOVA test from the table above where the F value shows greater than 0.05, and significance level for equal variances is greater 0.05, there are no significant differences of safety climate age groups.

Table 4.7(b)
Mean Ranks for Age

AGE	Mean	N	Std. Deviation
20-30	4.7241	58	1.16041
31-40	4.9667	70	1.18858
41-50	5.3611	6	1.04039
51-60	5.6667	4	.59317
Total	4.9022	138	1.16653

The correlation between six variables above table claims that respondents mostly answered slightly agree for each age group listed. The age group 51-60 mean value higher which is 5.6667 compared other age group. Therefore, H1 is acceptable.

4.6.2 Gender and Safety Climate

H 2 the female radiographers have higher safety climate

Table 4.8(a)
Gender Status for t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
meanSC	Equal variances assumed	.421	.518	-.343	136	.732	-.07326	.21377	-.49601	.34949
	Equal variances not assumed			-.336	80.071	.738	-.07326	.21815	-.50738	.36086

The independent sample test Table 4.12 also shows the safety climate difference between genders. The findings show there is significant value t= 0.336 , p = 0. 732). Since the significance level for F test is greater than 0.05 which is 0.421 and significance is (0.518) level for equal variances assumed is also greater than 0.05, there are no significant differences between safety climate means for both male and female radiographers. The male and female radiographers mean is 4.8523 and 4.9255 and significant 2 tailed 0.732. In other words, male and female radiographers have almost similar perceptions of safety climate. H 2 is acceptable.

Table 4.8(b)
Mean Ranks for Gender

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
meanSC	MALE	44	4.8523	1.21480	.18314
	FEMALE	94	4.9255	1.14916	.11853

The mean for a male is 4.8523 while female 4.9255 and standard deviation 1.21480 and 1.14916 respectively. The female is the majority respondents and they mean is slightlyagree to compare to male. Therefore, the H2 hypothesis is acceptable.

4.6.3 Race and Safety Climate

H3 the Malay radiographers have higher participation in safety climate

Table 4.9(a)
Race Status :ANOVA Statistics

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.425	3	1.142	.836	.476
Within Groups	183.004	134	1.366		
Total	186.429	137			

Table 4.9(b)
Mean ranks for Race

RACE	Mean	N	Std. Deviation
MALAY	4.8555	113	1.21100
CHINESE	5.6000	5	.75093
INDIAN	4.9063	16	.96026
OTHERS	5.3333	4	.94281
Total	4.9022	138	1.16653

The sampling population among the respondents which is 4 race have been analyzed which is Malay, Chinese, Indian and others. The findings for the group analyzed by ANOVA and the results are not significant. The majority Malay is M=4.8, 5.6, 4.9 and 5.3 respectively. ANOVA test shows that the significant level of F value is 0.476 ($p<0.05$), Therefore, H3 is not acceptable. Although the value is not significant, the mean safety climate of the Chinese group is slightly higher than the other group of race.

4.6.4 Marital Status and Safety Climate

H4 the married have higher participation in safety climate

Table 4.10(a)

Marital Status for t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
meanSC	Equal variances assumed	.000	.997	-2.081	136	.039	-.45338	.21791	-.88431	-.02245
	Equal variances not assumed			-2.128	73.032	.037	-.45338	.21305	-.87799	-.02877

Table 4.10(b)

Mean Ranks for Marital Status Category

	MARITAL	N	Mean	Std. Deviation	Std. Error Mean
MeanSC	SINGLE	39	4.5769	1.11006	.17775
	MARRIED	99	5.0303	1.16870	.11746

For the marital status, the single respondents are 39 and married 99 have been analyzed using a t-test. The mean value for single 4.5769 while married 5.0303 in the range of slightly agree. Other than that, F.000 and Significant .997 and Sig (2-tailed) .039.

T-test result shows that the significant level is 0.997 ($p<0.05$), therefore Hypothesis 4 cannot be rejected.

4.6.5 Years of Service and Safety Climate

H the most experience radiographers have a high safety

Table 4.11(a)
ANOVA Test for Year of Service and Safety Climate

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.300	4	1.075	.785	.537
Within Groups	182.129	133	1.369		
Total	186.429	137			

Table 4.11 (b)
Mean Ranks for Year of Service

YEAR	Mean	N	Std. Deviation
5-10 YEARS	4.7588	38	1.17513
11-20 YEARS	4.8307	64	1.18764
21-30 YEARS	5.2262	28	1.19258
31-40 YEARS	4.9444	6	.86709
MORE THAN 40 YEARS	5.2500	2	.11785
Total	4.9022	138	1.16653

The correlation using the ANOVA test for the year of service and significant value is 0.537 which is not significant but more than 40 years of service is 5.2500 mean and its slightly agree. Meanwhile, the data 40 years more cannot present as main data because the sample size is small. H 5 is not acceptable.

4.7 Descriptive Statistics of Variable

From the result of this study, it is revealed that safety climate among radiographers in 3 hospitals in Selangor investigated by using questionnaire distributed. The sampling populations are 138 people. The researchers found that, since the value of Cronbach‟s alpha is more than

0.6, the instrument is considered as reliable to measure the variable which means that the confidence value of measurement for this study 0.925.

4.8 Chapter Summary

This chapter overall about the data collected and were analysed through SPSS. Basically in this research, the respondent demographic is mainly focused to understand the background and character of respondents. The analysis conducted to know the mean of the data and Cronbach alpha, coefficient and ANOVA test is done to interpretation independent variable (IV) and dependent variable (DV).

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter mainly focuses on the conclusion of the findings and recommendations for the betterment of safety climate among radiographers in the hospitals. The research objectiveswere the major issuesand will be discussed further. In addition, the research also found some of the recommendations for the issue and problem facing by radiographers and safety climate including safety behavior factors should be overcome.

5.2 Discussion

The level of safety climate described the employee‟s perception of the weight of safety issues in work performance and the strength of the safety climate measures the level of agreement concerning the safety climate level as stated by Zohar(2000).Resultsof findings have shown that there is a majority of 68.1 % (n=94) of female radiographers from three different hospitals which was Hospital Serdang, Hospital Kajang, and Hospital Klang involved in this study. The majority of the respondents were from Hospital Klang which was 44.9% (n=62).

5.2.1 Mean of Safety Climate

The overall level of safety climate among the radiographers is neutral where most of them choose *‘4 = Neutral’*as for their participation

on the safety climate of the organization. Therefore it is concluded that majority of the radiographers has a neutral level of safety climate in their workplace and this result in dissatisfaction in the safety climate of organizations. This outcome might due to the concerns towards radiographic safety are the major priority as compared to the safety climate in the organization.

The result of this study was supported by Swedler et al. (2015) where safety climate does not directly affects the injuries among workers. It described that accidents among workers happened although they have participated in safety climate. Griffin (2000) stated that safety climate is often considered as more subtle and hands-on in providing information on safety as compared to traditional safety dimensions. Contrarily many studies have reported that safety climate has always been connected with better safe workplace behaviours and reducing injuries while on duty (Swedler et al. 2015).

Beus et al. (2010) notified that potential safety climate injury linkage was not as strong as the previous injury although it was found that accidents and safety climate were correlated. Nevertheless McNamee et al. (1997) emphasized that employee occupational control were mediated through perceived effects of safety climate on injuries at the work place.

Current findings of the study indicated that higher the level of safety climate does not anticipated by the radiographers. Nonetheless Swadler et al. (2015) stated that the results of meta-analyses highlighted that safety climate would be measured prospectively to the total of injury

in order to accurately proven the connection between safety climate and occupational injury.

5.2.2 Age And Safety Climate

Result of age and safety climate have shown that the majority of respondents came from age group of31-40 years which comprised of 70 (50.7%) of them. On the other hand, the least came from age group of 51-60 years old which only 4(2.9%) of them. Based on the age group, majority of them answers *'4 = Neutral'*as their level of the organization of safety climate. However, p value shown a non significant value ($p > 0.05$) among the age groups on the level of safety climate. This result has proven that respondents had neither agree nor disagree with the perception on safety climate regardless of the age groups.

In a study by Siu and Phillips (2003), it was reported that the work-related incidents were associated to age in a curvilinear way which initially injuries will increasing with age and eventually decline. It was proved that respondents will give more attention on safety as their age increasing. Contrarily, the Swedish workers aged 45 and above were found to be experienced injury while on duty and resulted in more time away from work due to the injuries at work as compared to their younger counter parts (Kemmlert et al. 2001).

Siu et al. (2001) mentioned that the Western and Asian population was well established with age related and personnel‟s work safety. Generally Siu et al. (2003) concluded that older workers incline to adjusted to work. Age and employee susceptibility towards illness and

injury has become even more important due to the fewer research on age differences in safety attitudes (Topf 2000).

5.2.3 Gender and Safety Climate

Based on the gender comparison, male and female radiographer has no difference in the perception of the safety climate in the organization. Most of the respondents regardless of gender choose *'4 = Neutral'* as for their level of the organizational safety climate. Therefore, there is no significant difference in the level of safety climate among male and female radiographers ($p > 0.05$).

It is expected that female radiographers have a better participation in organizational safety climate although the results from this study were not proven so. This might due to females, who are usually associated with traits such as nurturing, sympathy and concern for others are more interested in the job descriptions. The male counterpart was seen as competitive, aggressive and prone to risk-taking. Harris & Jenkins (2006) recorded that males were prone to ignore safety procedures and voluntarily engaged in risky behaviors more often as compared to females.

A study by Siu et al. (2000) recorded that there were differences in anticipation of safety scale between male and female workers. It is shown that female workers were more likely to have positive attitudes on towards safety at work. Further investigations by Milijic et al. (2014) found that gender of the worker‟s was significantly influence perception on the safety climate.

5.2.4 Marital Status and Safety Climate

The findings of the study also revealed that marital status has a significant difference ($p< 0.05$) on the level of organizational safety climate. It is shown that married radiographers have a better level of participation in the organizational safety climate where the majority of them choose *'5 = Slightly agree'*. This might due to the responsibilities of married radiographers are higher since they have a family to think and to be taken care of as compared to single radiographers.

Fung et al. (2006) stated that there was a significant relationship between marital status and perception on safety climate. In addition, Choudry et al. (2009) reported that safety climate employed positive effects upon insights among married workers.The attitude of single workers towards safety will change once they were married since there are family members to be supported Fung et al. (2006).

Injuries and accidents need to be avoided also safety while working will be their priority. It is expected that responsibility for family and parenthood might encourage meticulousness, risk aversion, and workplace safety behavior, and result in a decrease in accident involvement among married men (Gyekye & Selminen 2000). Therefore the participation of safety climate among married radiographers was expected to be higher as compared to their counterpart although the result from this study was not proven so.

5.2.5 Race and Safety Climate

As for the difference on the level of safety climate across the races, it was proven that the participation on safety climate of the organization was higher among the Chinese where most of them choose *'5 = Slightly agree'*. However, the result was not significant ($p > 0.05$). Thus, literally, there is no significant difference in the level of participation in safety climate of organization among races. This might due to the small sample size of Chinese radiographers involved in this study.

Dong et al. (2009) has revealed that the White were less likely had injuries as compared to their Hispanic counter parts in the construction sites. It was also reported that fatal injuries among Hispanic workers who were born in the United States were lower as compared to the Hispanic whose were not born in the United States (Dong et al. 2009). In another study by Thomas et al. (2012) recorded that Latino construction workers who work in the residential area involved in a high proportions of occupational injury and casualty. According to study by Kermode et al. (2005) compliance towards Universal Precautions among health care workers among north Indian also is needed in order to improve their understanding and knowledge on the safety climate.

These studies have concluded that attention should be given to safety climate in order to improve the safety among workers particularly. Hence a better training, intervention and prevention measures must be applied to all risky workers regardless of races.

5.2.6 Years of Service And Safety Climate

Findings of the study also shown that radiographers who have been working for more than 40 years choose *'5 = Slightly agree'* on the Likert scale of the organizational safety climate questionnaire. It is expected that radiographers who have served for a longer period of time have more experiences and responsibilities towards safety climate. Moreover, some of them might be involved in policy making a decision. There were 1.5 % (n-= 2) agreed with the anticipation of an organizational safety climate. However statistical analysis revealed the length of service does not significantly correlated (p> 0.05) with safety climate. In addition, the number of radiographers who has served more than 40 years participated in this study was so small. Thus, bias may have affected the final result of this variable.

Current result of this study was not supporting to study by Stalnaker (1998) where it was documented that experienced workers have a greater knowledge on the job and well equipped with skills thus reporting to lower accident rate. Study by Hon et al. (2014) reported that workers are prone to perform by experience rather than safety rules and regulations since they have longer service durations. According to Lyu et al. (2014) workers with longer years of service were less likely to encourage them to contribute voluntarily in safety activities although it was found that safety compliance level were increased as to their positive safety climate.

5.3 Impact of Research Findings

Through the reported results the anticipation of safety climate was not significantly different among the variables. There are a few limitations in this study. Firstly the sample size was rather small for races and length of service among radiographers. For instance, there were more Malay subjects 81.9 % (n= 113) as compared to other races, thus influenced results on some hypothesis. In this cross-sectional data collection technique, only selected hospitals managed to participate in this study.

The findings of the study found that safety climate is a principal indicator for an organization. It was revealed that perceptions of procedures, policies and practices among the radiographers particularly need to be improved. A constructive safety climate is beneficial towards assisting the radiographers to get better implementations on the safety at work by dropping the risk taking behaviours among them. Moreover, safety climate among radiographers can guide them to appliance the safety in daily task. Radiographers should not only focus radiation safety only they must be exposed safety is wide after the research describe safety climate in Radiology Department.

5.4 Recommendations

There are few recommendations towards a better service among radiographers in hospital setting in order to increase their anticipation towards safety climate. The radiographers must apply safety when doing

radiograph and daily task in Radiology Department. By applying safety in work procedures accident and injury can be prevent.

5.4.1 Recommendations to the Organization

It is essential to the radiographers to drop the underreporting of accidents and injuries by cultivating safety performance of the radiographers. Since the root of causes of the injuries and accidents were known, positive safety climate will eventually reducing the underreporting of the injuries and accidents which lead to the enhancement of the safety among radiographers. It is hoped that the organization could increase participation of radiographer on safety climate by conducting activities or refining new policies.

5.4.2 Recommendations for future studies

In advance, sample size could be increased in order to have a larger and more diverse group of radiographer populations. A larger, more heterogeneous sample would strengthen the conclusions of this study substantively. In addition, there is a constraint in research time where the time for data collection and analysis were short. In this study, safety climate is a concept that has not been tested repeatedly, potentially adding unwanted and uncontrolled error to the results. Hence, further studies are needed in order to identify confounding factors which would affect the organizational safety climate. It is suggested to conduct an intervention

study to test on the safety anticipation among radiographers theoretically and practical wise.

5.5 Conclusion

Little research has explored the relationship between safety climate and a leading behavioural indicator. It is suggested to conduct more cross-tier research for a better understanding of the differences between perceptions at the organizational and group tiers should be proposed. It has proven that organizational demography such as marital status and gender to be an important variable in an investigation into safety management policies. Despite the above-mentioned limitation, the current study contributes to the emergent body of research that involves safety climate and hospital settings. Safety climate among radiographers in hospitals can be improved by enhance management commitment and implement by planning action training, policies, facilities, procedures, campaign and rewards to improve the workplace.

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APPENDICES

Dear respondent,
My name is Alagumail@ Alagu a student from Universiti Utara Malaysia doing Master Science of Occupational Safety and Health Management. I am conducting a study on safety climate among radiographers. I attach a copy of the questionnaire that is related to my studies. Please take few minutes to answer my questions below. The questionnaire comprises 12 questions and it will focus on organization safety climate, proactive safety behaviour and compliance safety behaviour. All the responses will remain confidential and your identity will not be revealed to anyone. Your participation and support in this study really appreciated on the information provided is for academic purpose only. For further enquiry you may contact me via email alagu.anusha3@gmail.com or my direct mobile no 011-21264865. Thank you very much for your cooperation.

DEMOGRAPHIC INFORMATION

Please tick (√) the answer and fill in the space given

1. Age

20-30	
31-40	
41-50	
51-60	

2. Gender ☐ Male ☐ Female

3. Race

Malay	
Chinese	
Indian	
Others	

4. Marital status Single ☐ Married ☐

5. Years of service

Less 5 year	
5-10 years	
11-20 years	
21-30 years	
31-40 years	
More than 40 years	

(*Think about your nature of your safety climate among radiographers. Circle your best answers according to the scale below*).

Sangat tidak setuju (Strongly disagree)	Tidak setuju (Disagree)	Sedikit tidak setuju (Slighty Disagree)	Berkecuali/ Natural (Neutral)	Sedikit bersetuju (Slighty agree)	Setuju (Agree)	Sangat setuju (Strongly agree)
1	2	3	4	5	6	7

Organizational safety climate ***Iklim keselamatan organisasi***
My Organization…

Tempat kerja saya…								
1	provides all the equipment needed to do the job safely. *menyediakan semua peralatan yang diperlukan bagi menjalankan tugas dengan selamat***.**	1	2	3	4	5	6	7
2	quickly corrects any safety hazard even if it is costly. *segera membuat pembetulan jika terdapat bahaya keselamatan walaupun memerlukan kos yang tinggi.*	1	2	3	4	5	6	7
3	considers a person"s safety behavior when there are promotions. *mengambil kira tingkah laku keselamatan setiap individu sewaktu kenaikan pangkat.*	1	2	3	4	5	6	7
4	invests a lot of time and money in safety training for workers. *melaburkan masa dan wang yang banyak dalam menjalankan latihan keselamatan kepada pekerja.*	1	2	3	4	5	6	7
5	listens carefully to workers" ideas about improving safety. *mendengar dengan baik segala idea daripada pekerja dalam meningkatkan tahap keselamatan.*	1	2	3	4	5	6	7
6	gives safety personnel the power they need to do their job. *memberi kuasa yang diperlukan oleh anggota keselamatan untuk menjalankan tugas mereka.*	1	2	3	4	5	6	7
Proactive safety behavior ***Tingkah laku keselamatan proaktif***								
7	I have made suggestions to improve safety. *Saya telah membuat cadangan untuk meningkatkan tahap keselamatan.*	1	2	3	4	5	6	7
8	I have tried to encourage my colleagues to get involved in safety issues. *Saya telah mencuba untuk menggalakkan rakan sekerja saya untuk terlibat dalam isu keselamatan.*	1	2	3	4	5	6	7
9	I have acted to prevent the recurrence of previous incidents. *Saya telah bertindak untuk mencegah berlakunya kejadian/peristiwa yang lalu.*	1	2	3	4	5	6	7
Compliance safety behavior ***Pematuhan tingkah laku keselamatan***								
10	I have used the appropriate PPE as indicated by the Department of Health and Safety. *Saya telah menggunakan PPE yang sesuai seperti yang disarankan oleh Jabatan Kesihatan dan Keselamatan.*	1	2	3	4	5	6	7
11	I properly performed my work while wearing PPE. *Saya melakukan kerja saya dengan baik semasa memakai PPE.*	1	2	3	4	5	6	7
12	I have taken the appropriate steps to prevent exposure to hazards and risks. *Saya telah mengambil langkah yang sesuai untuk untuk mengelakkan pendedahan kepada bahaya dan risiko.*	1	2	3	4	5	6	7

If you wish to elaborate on some of your answers, or if you have any comments regarding the study, you are welcome to write them here.
Comments:

☺ Thank you for filling in the questionnaire.