



**UNIVERSITI PUTRA MALAYSIA**

***PREDICTORS OF KNOWLEDGE, ATTITUDE AND PRACTICES  
ON WORK RELATED INJURIES AMONG LABORATORY  
STAFFS IN UNIVERSITI PUTRA MALAYSIA***

**ERICSON NETTO A/L GILBERT NETTO**

**FPSK(M) 2017 23**



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STAFFS IN UNIVERSITI PUTRA MALAYSIA**

**By**

**ERICSON NETTO A/L GILBERT NETTO**

**Dissertation Submitted to the Department of Community Health, Faculty of  
Medicine and Health Sciences, Universiti Putra Malaysia, in Fulfilment of the  
Requirements for the Degree of Master of Public Health (MPH)**

**August 2017**

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Abstract of dissertation presented to the Department of Community Health, Faculty of  
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**August 2017**

**Chair: Dr Titi Rahmawati binti Hamedon**

**Faculty: Faculty of Medical and Health Sciences**

**Introduction:** Current knowledge of laboratory workforce on safe working environment leaves much space for improvement and need to be explored further. Common laboratory risks and hazards are numerous but can be avoided with better knowledge, attitude and simple safe working practices. Many laboratory workers are unaware of the potential hazards in their work environment, which makes them more vulnerable to injuries. Work related injuries (WRI) may cause absenteeism among its staff. Worker absence due to WRI is an important phenomenon across all countries, industries, and occupations. Laboratory staffs in universities play a vital role in providing support for scientific investigation and experiments to be done and lead to the upgrade of the university standards. In relation to this, the job characteristics and job scope has become more challenging and risky exposing them to numerous occupational hazard.

**Methodology:** A cross-sectional study based on proportionate random sampling was conducted among all laboratory staffs in UPM. Data was collected using a self-administered questionnaire to determine the level of knowledge, attitude and practices with its associating factors and predictors. Prevalence of WRI was also calculated. All data collected was analysed using IBM SPSS version 22 involving descriptive and inferential statistics.

**Results:** In this study, 64.5% of respondents obtained a good level of knowledge, 51.1% respondents had a positive attitude and 68.4% respondents had a good level of practice on WRI. The prevalence of WRI among laboratory staffs in UPM was 14% with the main type of WRI being musculoskeletal injuries. The predictors for good level of knowledge were gender being female (AOR=2.218, 95% CI=1.279-3.846) and working hours of >45 hours per week (AOR=0.327, 95% CI=0.178-0.601). In terms of

positive attitude on WRI, the predictor was education level of degree or higher (AOR=2.168, 95% CI=1.279-3.676) while the predictor for good level of practice on WRI was the non-involvement in part time job (AOR=2.029, 95% CI=1.026-4.014).

**Conclusion:** Knowledge, attitude and practices on WRI among laboratory staffs can be improved by organizing regular refreshment courses and training. Importance and impact of WRI to our country should be emphasized. This will instill a safe work culture among laboratory workers and indirectly reduce the occurrence of WRI.

**Keywords** : Knowledge, attitude, practice, work related injury, laboratory staff



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**PERAMAL PENGETAHUAN, SIKAP DAN PERILAKU TERHADAP  
KEMALANGAN TEMPAT KERJA DI KALANGAN PEKERJA MAKMAL  
UNIVERSITI PUTRA MALAYSIA**

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**Fakulti: Perubatan dan Sains Kesihatan**

**Pengenalan:** Tahap pengetahuan kini berkaitan kemalangan tempat kerja di kalangan pekerja makmal masih boleh diperbaiki dan harus dikaji dengan lebih lanjut. Kemalangan tempat kerja di makmal kerap berlaku dan boleh dielakkan dengan pengetahuan, sikap dan perilaku keselamatan tempat kerja yang lebih baik. Masih ramai pekerja makmal yang tidak sedar akan potensi bahaya tempat kerja masing-masing yang menjadikan mereka lebih mudah cedera. Kemalangan tempat kerja boleh menyebabkan seseorang pekerja tidak hadir bekerja untuk masa yang tertentu. Ketidakhadiran merupakan satu fenomena yang penting yang kian menular di kebanyakan negara, industri dan pekerjaan. Pekerja makmal di institusi pengajian tinggi penting bagi membantu meningkatkan tahap keupayaan dan pengetahuan pelajar dan seterusnya meningkatkan nama institusi masing-masing. Ini secara langsung menjadikan profession mereka berisiko tinggi dan bahaya.

**Metodologi:** Satu kajian irisan lintang telah dijalankan dari Januari 2017 hingga Mei 2017 dikalangan semua pekerja makmal di UPM. Data dikumpulkan menggunakan borang soal selidik yang telah disahkan bagi menentukan kekerapan berlakunya kemalangan tempat kerja, tahap pengetahuan, sikap dan perilaku dan seterusnya menentukan hubungan dan ramalan. Semua data telah dianalisa dengan menggunakan SPSS Versi 22.

**Keputusan:** Dalam kajian ini, 64.5% responden telah mencapai tahap pengetahuan yang memuaskan, 51.1% responden didapati mempunyai sikap positif dan 68.4% responden mencapai tahap perilaku yang memuaskan berkaitan kemalangan tempat kerja. Kajian juga menunjukkan bahawa 14% dari responden pernah mengalami kecederaan tempat kerja dimana kecederaan otot merupakan kecederaan yang paling kerap dialami. Tahap pengetahuan yang baik boleh diramalkan oleh jantina perempuan (AOR=2.218, 95% CI=1.279-3.846) dan bekerja >45 jam dalam seminggu (AOR=0.327, 95% CI=0.178-0.601). Sikap positif pula boleh diramalkan oleh tahap pendidikan sarjana atau lebih tinggi (AOR=2.168, 95% CI=1.279-3.676) manakala

tahap perilaku yang baik boleh diramalkan oleh penglibatan dalam kerja luar (AOR=2.029, 95% CI=1.026-4.014).

**Kesimpulan:** Pengetahuan, sikap dan perilaku terhadap kemalangan tempat kerja di kalangan pekerja makmal boleh ditingkatkan dengan menganjurkan kursus-kursus dan latihan yang berkaitan dari semasa ke semasa. Kesan kemalangan tempat kerja kepada negara kita perlu ditekankan. Ini akan menyerapkan sikap keselamatan tempat kerja dan seterusnya boleh menurunkan jumlah kes kemalangan tempat kerja.

**Kata kunci** : Pengetahuan, sikap, perilaku, kemalangan tempat kerja, pekerja makmal



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I certify that a dissertation Examination Committee has met on 1<sup>st</sup> August 2017 to conduct the final examination of Ericson Netto on his dissertation entitled 'Predictors of knowledge, attitude and practices on work related injuries among laboratory staffs in Universiti Putra Malaysia' in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Public Health.

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## TABLE OF CONTENTS

	<b>PAGE</b>
<b>ABSTRACT</b>	iii
<b>ABSTRAK</b>	v
<b>ACKNOWLEDGEMENTS</b>	vi
<b>APPROVAL</b>	vii
<b>DECLARATION</b>	viii
<b>LIST OF TABLES</b>	xvi
<b>LIST OF FIGURES</b>	xvii
<b>LIST OF ABBREVIATIONS</b>	xviii
<b>CHAPTER</b>	
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Background	1
1.2 Problem statement	2
1.3 Significance of study	3
1.4 Research question	4
1.5 Objectives of study	4
1.6 Hypotheses	
<b>2 LITERATURE REVIEW</b>	<b>5</b>
2.1 Work related injury	5
2.2 Knowledge	6
2.3 Attitude	7
2.4 Practice	7
2.5 Socio demographic factors	8
2.5.1 Age	8
2.5.2 Gender	8
2.5.3 Ethnicity	9
2.5.4 Marital status	9
2.5.5 Education level	10
2.5.6 Income	10
2.6 Employment factors	11
2.6.1 Job position	11
2.6.2 Duration of employment	12
2.6.3 Working hours	12
2.6.4 Job exposure	13
2.6.5 Employment status	13
2.6.6 Overtime involvement	14
2.6.7 Part time job involvement	16

<b>3</b>	<b>MATERIALS AND METHODS / METHODOLOGY</b>	<b>17</b>
3.1	Study location	17
3.2	Study design	17
3.3	Study population	17
3.4	Inclusion and exclusion criteria	18
3.5	Sampling frame	18
3.6	Sampling unit	18
3.7	Sample size estimation	19
3.8	Sampling method	19
3.9	Study instrument	20
3.10	Variables	21
3.11	Validity and reliability	22
3.12	Operational definition	22
3.13	Ethical consideration	24
3.14	Data analysis	24
3.15	Budget	24
3.16	Gantt chart	25
<b>4</b>	<b>RESULTS</b>	<b>26</b>
4.1	Response rate	26
4.2	Normality test	26
4.3	Socio demographic distribution	26
4.4	Employment characteristics distribution	28
4.5	Prevalence of WRI among laboratory staffs	28
4.6	Level of knowledge on WRI	29
4.7	Level of attitude on WRI	29
4.8	Level of practice on WRI	29
4.9	Association between socio demographic factors with knowledge	30
4.10	Association between employment factors with knowledge	31
4.11	Association between socio demographic factors with attitude	32
4.12	Association between employment factors with attitude	33
4.13	Association between socio demographic factors with practice	34
4.14	Association between employment factors with practice	35
4.15	Association between knowledge and attitude	36
4.16	Association between knowledge and practice	36
4.17	Association between attitude and practice	36
4.18	Predictors of good level of knowledge	37
4.19	Predictors of positive attitude	38

4.20	Predictors of good level of practice	39
<b>5</b>	<b>DISCUSSION</b>	<b>40</b>
5.1	Overview	40
5.2	Prevalence of WRI	40
5.3	Level of knowledge on WRI	41
5.4	Level of attitude on WRI	41
5.5	Level of practice on WRI	42
5.6	Socio demographic factors on WRI	42
5.6.1	Age	42
5.6.2	Gender	43
5.6.3	Marital status	43
5.6.4	Education level	44
5.6.5	Average monthly income	44
5.7	Employment factors on WRI	45
5.7.1	Work experience	45
5.7.2	Employment status	45
5.7.3	Working hours	46
5.7.4	Overtime involvement	46
5.7.5	Part time job involvement	47
<b>6</b>	<b>CONCLUSION, LIMITATION AND RECOMMENDATIONS</b>	<b>48</b>
	<b>REFERENCES/BIBLIOGRAPHY</b>	<b>50</b>
	<b>APPENDICES</b>	<b>53</b>
	<b>BIODATA OF STUDENT</b>	<b>82</b>

## *LIST OF TABLES*

<b>Table</b>	<b>Page</b>	
3.1	Distribution of laboratory staffs in different faculties	18
3.2	Sample size calculation using multiple associations	19
3.3	Number of selected respondents from each faculty	20
3.4	Table of proposed budget for study	24
3.5	Gantt Chart of study	25
4.1	Socio-demographic distribution of respondents (N=307)	27
4.2	Distribution of respondents according to employment characteristics (N=307)	28
4.3	Nature of WRI experienced based on ILO classification	29
4.4	Association between socio-demographic factors with knowledge on WRI	30
4.5	Association between employment characteristics with level of knowledge on WRI	31
4.6	Association between socio-demographic factors with level of attitude on WRI	32
4.7	Association between employment characteristics with level of attitude on WRI	33
4.8	Association between socio-demographic factors with level of practice on WRI	34
4.9	Association between employment characteristics with level of practice on WRI	35
4.10	Association between level of knowledge and attitude on WRI	36
4.11	Association between level of knowledge and practice on WRI	36
4.12	Association between level of attitude and practice on WRI	37
4.13	Predictors of good level of knowledge on WRI (ENTER Method)	38
4.14	Predictors of attitude on WRI (Backward-LR Method)	39
4.15	Predictors of practice on WRI (Forward-LR Method)	39
5.1	Comparison of WRI between the study finding and other countries	41



## *LIST OF FIGURES*

<b>Figure</b>		<b>Page</b>
2.1	Reported occupational accidents in Malaysia 2011-2015	5
2.2	Total benefits payment in Malaysia 2011-2015	6
2.3	Conceptual Framework of knowledge, attitude and practice on WRI among laboratory staffs in UPM	16
4.1	Flow chart showing response rate	26



### ***LIST OF ABBREVIATIONS***

WRI	-	Work related injury
OSHA	-	Occupational and Safety Health Association
ILO	-	International Labour Organization
WHO	-	World Health Organization
ACC	-	Accident Compensation Cooperation
DOSH	-	Department of Occupational and Safety Health
NIOSH	-	National Institute of Safety and Health
UPM	-	Universiti Putra Malaysia
SPSS	-	Statistical Package for Social Sciences



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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Work Related Injury (WRI) is defined as an injury or illness caused, contributed or significantly aggravated by events or exposures in the working environment (DOSH, 2016). Out of the 2.3 million deaths that occurred annually around the world for reasons attributed to work, the biggest mortality burden came from work related diseases, accounting for 87% whilst the remainder were due to occupational injuries (Hämäläinen, 2010). Injuries and fatalities at work have a great impact, both directly and indirectly and prevention measures must be enforced to reduce the occurrence.

Social Security Organization Malaysia indicated that RM2.2 billion was paid out as compensation to workers in Malaysia for the year 2013 and that number increased to RM2.4 billion in 2014 (PERKESO, 2016). This shows that there are large number of insured persons on temporary or permanent disablement benefits and invalidity benefits. The amount projected is inclusive of compensation paid for injuries and deaths due to travelling related to work. This shows significant affect of WRI on one's country economic burden.

Throughout these years, there have been numerous studies done to measure the burden of WRI in various industry such as transportation, agriculture, mining, chemical, metal industry and others but very limited in the education sector especially related to laboratories (Adinegara et al., 2011). One of the main reasons that this sector may have been overlooked is due to the fact that education industry is considered a low-hazard industry and they are not required by the federal law to comply with OSHA regulations in regards to maintaining accident reports (OSHA, 2014).

It has also been proven by various literatures that knowledge, attitude and perception on safety workplace play a significant role in reducing and subsequently preventing the occurrence of a WRI (Goswami et al., 2011; Rosliza et al., 2015; Zaveri & Karia, 2005). A good knowledge together with a positive attitude will determine the practice of a safe worker. Therefore, it is vital to determine the knowledge, attitude and practice among laboratory staffs on WRI as well as to examine the factors contributing to it. The findings of this study can hopefully be used to plan and execute intervention programmes to reduce and eventually prevent WRI from happening.

WRI may cause absenteeism among its staff. Many parties may take this issue lightly but a study in 2010 showed that the effect of workers absence is significant in determining the productivity of an organization (Herrmann & Rockoff, 2010). Worker absence is an important phenomenon across all countries, industries, and occupations. Absenteeism is a major concern in developing countries, particularly in the public sector where oversight may be very weak (Chaudhury et al., 2006).

## 1.2 Problem Statement

There are various type of laboratories in an university setting namely chemical laboratory, computer laboratory, language laboratory, medical laboratory, biological laboratory, agricultural laboratory and science laboratory. A laboratory is a place equipped for experimental study in a science or for testing and analysis or broadly a place providing opportunity for experimentation, observation, or practice in a field of study (Merriam-Webster, 2016). The work conducted in a laboratory may include teaching or learning, research, clinical or diagnostic testing and analysis. For the past 150 years with the growth and advancement in science and technology, many fields has been transformed and rely heavily on laboratories to perform test and analysis (Kassa, 2015). Laboratory workers are exposed to numerous potential hazards including chemical (corrosive, flammable, toxic), biological (pathogenic microorganisms, animals, tissues, blood and body fluid), physical (noise, radiation, manual handling), electrical or mechanical (high voltage apparatus, machineries) and psychological (emotional stress, bullying).

Current knowledge of laboratory workforce on safe working environment leaves much space for improvement and need to be explored further. Common laboratory risks and hazards are numerous but can be avoided with knowledge, safe working practices and simple rules (Adyanthaya, 2013). According to a study done in Malaysia in 2008, the average annual incident rate of WRI for 3 main laboratories in Hospital Kuala Lumpur, Hospital Universiti Kebangsaan Malaysia and Pusat Perubatan Universiti Malaya is 2.05/100 full time equivalent employees (FTE) (Anuar et al., 2008). In other words, the incidence of WRI is 2.1% among full time employees in 3 of those laboratories in Malaysia.

In comparison to the manufacturing industry which recorded 68 deaths, 2173 non permanent disability and 74 cases of permanent disability for the year 2016, the public services in which the education industry is in recorded only 6 deaths, 101 non permanent disability and 3 cases of permanent disability for the same period of time (DOSH, 2016). Although the number may seem small in comparison with other industries, actions should be taken to improve those numbers. In addition to that, consideration should be made on non reported cases. The fact that these are professionally trained personnel performing specific task also shall not be ignored.

A recent study on WRI among university staffs in UPM revealed that 5.4% of the respondents experienced WRI at least once in their career. This figure looks relatively small but indeed is 17 times higher compared with the results of a study done in the United Europe in 2012 on WRI among university staffs (Shalaw, 2015). It was reported that in Spain, out of 4761 university employees, only 0.40% had WRI, 16,591 (0.66%) in Germany and 18,339 (0.61%) in the United Kingdom (UK) (Suárez-Cebador et al., 2015). In addition to that, Shalaw also found out that the highest percentage of WRI among university staffs are suffered by the laboratory staffs where exposure to occupational hazards are higher.

A study done on the knowledge, attitude and practice on safety culture among staffs in Faculty of Medicine and Health Services in Universiti Putra Malaysia (UPM) concluded that good knowledge and positive attitude being important factors in determining good safety practices among participants (Rosliza et al., 2015). Many workers are unaware of the potential hazards in their work environment which makes them more vulnerable to injuries (Parimalam, Kamalamma& Ganguli, 2007).

### **1.3 Significance of Study**

Laboratory staffs play a vital role in providing support for scientific investigation and experiments, publishing scientific articles and lead to the upgrade of the university standards. They need to be more healthy and fit to perform their duties. In relation to this, the job characteristics and job scope has become more challenging and risky. More chemicals are being found from day to day and more researches are being done from time to time. Therefore, determining the knowledge, attitude and practices among laboratory workers who work at university laboratory is of an important task, since it is very important to reduce the prevalence of WRI. The findings of the study can be used to plan for programmes that will reduce the incidence of WRI and eventually to try to prevent it from occurring.

Overall information about the level of knowledge, attitude and practice of WRI among laboratory staffs is obtained and used to indentify gaps in each study sites in regards to safety and help to make necessary corrective action, provide locally or work place training. This may then directly or indirectly lead to safer work place practices for this university and also serve as a baseline document to researchers or students offering various information for further studies on the subject.

### **1.4 Research Question**

The purpose of the study is to answer the following research questions:

- a) What is the prevalence of WRI among laboratory staffs in UPM?
- b) What is the level of knowledge, attitude and practice on WRI among laboratory staffs in UPM?
- c) Is there any association between socio demographic factors with KAP of laboratory staffs in UPM on WRI?
- d) Is there any association between employment characteristics with KAP of laboratory staffs in UPM on WRI?
- e) Is there any association between level of knowledge, attitude and practice of laboratory staffs in UPM on WRI?
- f) What are the predictors of good level of knowledge, attitude and practice of laboratory staffs in UPM on WRI?

## **1.5 Objectives of Study**

### **1.5.1 General Objectives**

The general objective of this study is to determine the level of KAP among laboratory staffs in University Putra Malaysia (UPM) in relation to WRI and its associating factors.

### **1.5.2 Specific Objectives**

The specific objectives of this study are as follow:

- a) To describe the laboratory staffs according to socio-demographic characteristics and employment characteristics
- b) To determine the prevalence of WRI among laboratory staffs of UPM
- c) To determine the level of KAP on WRI among laboratory staffs in UPM
- d) To determine the association between socio demographic factors with KAP of laboratory staffs in UPM on WRI
- e) To determine the association between employment characteristics with KAP of laboratory staffs in UPM on WRI
- f) To determine the association between knowledge, attitude and practice of laboratory staffs in UPM on WRI
- g) To determine the predictors of good level of knowledge, attitude and practice of laboratory staffs in UPM on WRI?

## **1.6 Hypotheses**

H<sub>1</sub> - There is significant association between socio demographic factors with KAP of laboratory staffs in UPM on WRI

H<sub>2</sub> - There is significant association between employment characteristics with KAP of laboratory staffs in UPM on WRI

H<sub>3</sub> - There is significant association between knowledge, attitude and practice of laboratory staffs in UPM on WRI



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