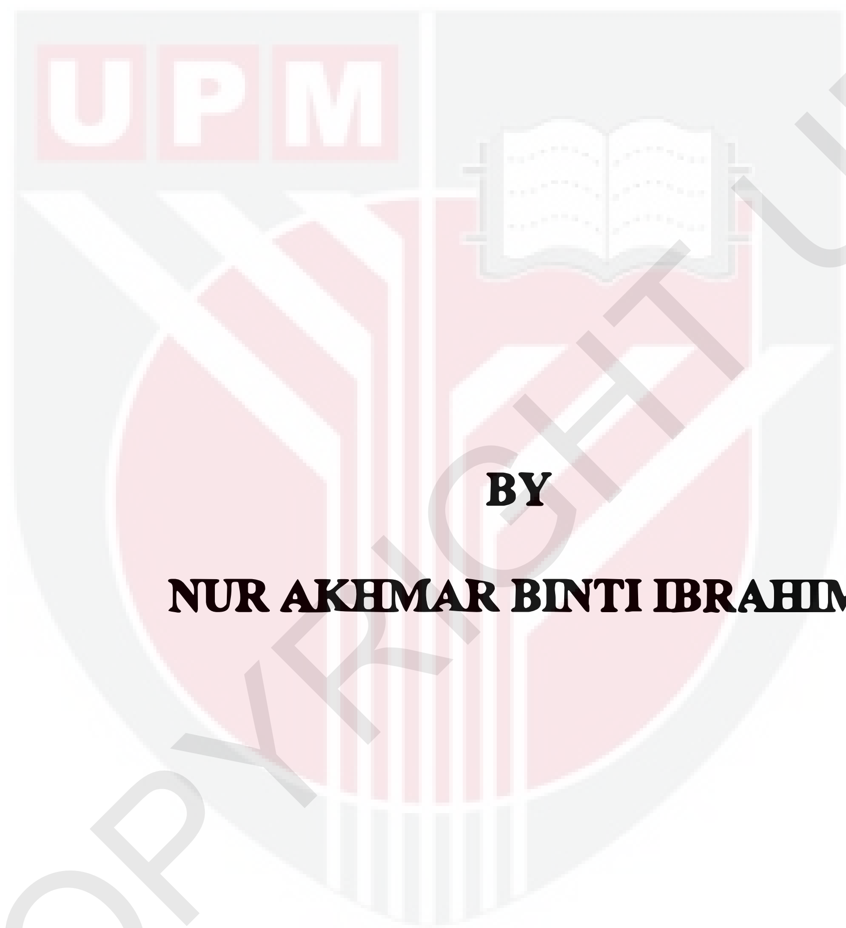
UNIVERSITI PUTRA MALAYSIA

WORK FAMILY CONFLICT, INDIVIDUAL FACTORS AND METABOLIC SYNDROME RISK AMONG OFFICERS IN IMMIGRATION DEPARTMENT MALAYSIA

NUR AKHMAR BINTI IBRAHIM

Ip
FPSK4 2019 33

WORK FAMILY CONFLICT, INDIVIDUAL FACTORS AND METABOLIC SYNDROME RISK AMONG OFFICERS IN IMMIGRATION DEPARTMENT MALAYSIA



© COPYRIGHT UPM

BY

NUR AKHMAR BINTI IBRAHIM

Thesis submitted in fulfilment of the requirement for the degree of Bachelor Science (Environmental and Occupational Health) from the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia.

ACKNOWLEDGEMENTS

I would first like to thank most to my supervisor, Assoc. Prof. Dr Irniza Rasdi of the Department of Environmental and Occupational Health Sciences from Universiti Putra Malaysia for her golden advice, patience, guidance and her invaluable assistance in helping us to finish this research project. I always admire the way she review the work and how she managed to entangled the knots in my head in helping me to make this research project possible. I would like to thank to the staff from Occupational Health Laboratories of Faculty of Medicines and Health Sciences for lending their equipments during data collection phase for this research project. Other than that, I would like to thank to the Immigration Department of Putrajaya, Kuala Lumpur, Shah Alam and KLIA for their fully commitments and participation, the study could not have been succeed without their help.

I would like to express my love and thankful for the full support from my family especially my parents as they are my strength to complete this journey of degree life. This kind of accomplishment would not have been achieved without the. Thank you.

© COPYRIGHT UPM

ABSTRACT

WORK FAMILY CONFLICT, INDIVIDUAL FACTORS AND METABOLIC SYNDROME RISK AMONG OFFICERS IN IMMIGRATION DEPARTMENT OF MALAYSIA

NUR AKHMAR BINTI IBRAHIM

Introduction: Metabolic syndrome risk is a multiplex risk factor for cardiovascular disease (CVD) and defined as hypertension and abdominal obesity in this study. **Objective:** This study aimed to identify the association between work-family conflict and metabolic syndrome risk among workers in immigration department and their differences based on socio-demographic factors, health behaviour and working characteristics. **Methodology:** A cross sectional study was conducted from February 2019 to May 2019 involving 254 officers (response rate = 100%) from immigration office in Putrajaya, Selangor, Kuala Lumpur and Kuala Lumpur International Airports. Data was collected through self-administered questionnaire in which WFC scales were adapted from standardized questionnaire. **Result and Discussion:** Most of the respondents participated in this study were 31 to 40 years old for both male and female. Blood pressure was significantly different between male and female (p=0.001) and between systolic and diastolic pressure (p=0.008). Types of physical activities, duration of exercise, types of exercise, smoking behavior, WIFt and FIWs significantly associated with metabolic syndrome risk among respondents. **Conclusion:** It is evident that WFC and several individual factors were significantly associated with metabolic syndrome risk among respondents. These findings suggest prompt action to reduce the chance of workers getting metabolic syndrome to ensure the healthy manpower for a long term.

Keywords: Work family conflict (WFC), Metabolic Syndrome Risk, Work Influence Family (WIF), Family Influence Work (FIW)

© COPYRIGHT UPM

ABSTRAK

KONFLIK KELUARGA KERJA, FAKTOR INDIVIDU DAN RISIKO SINDROM METABOLIK DALAM KALANGAN PEGAWAI DI JABATAN IMIGRESEN MALAYSIA

NUR AKHMAR BINTI IBRAHIM

Pengenalan: Risiko sindrom metabolik adalah faktor risiko multiplex untuk penyakit kardiovaskular (CVD) dan ditakrifkan sebagai hipertensi dan obesiti abdomen dalam kajian ini. **Objektif:** Kajian ini bertujuan untuk mengenal pasti hubungan antara konflik keluarga kerja dan risiko sindrom metabolik dalam kalangan pegawai di jabatan imigresen dan perbezaannya berdasarkan faktor sosio-demografi, tingkah laku kesihatan dan ciri-ciri kerja. **Metodologi:** Kajian keratan rentas dijalankan dari Februari 2019 hingga Mei 2019 melibatkan 254 pegawai (kadar sambutan = 100%) dari pejabat imigresen di Lapangan Terbang Antarabangsa Putrajaya, Selangor, Kuala Lumpur dan Kuala Lumpur. Data dikumpul melalui soal selidik sendiri yang mana skala WFC diadaptasi dari soal selidik standard. **Hasil dan Perbincangan:** Kebanyakan responden yang terlibat dalam kajian ini adalah 31 hingga 40 tahun untuk lelaki dan perempuan. Tekanan darah adalah berbeza dengan lelaki dan wanita ($p = 0.001$) dan antara tekanan sistolik dan diastolik ($p = 0.008$). Jenis aktiviti fizikal, tempoh latihan, jenis senaman, tingkah laku merokok, WIFt dan FIWs yang berkait rapat dengan risiko sindrom metabolik di kalangan responden. **Kesimpulan:** Adalah jelas bahawa WFC dan beberapa faktor individu dikaitkan dengan risiko sindrom metabolik di kalangan responden. Penemuan ini mencadangkan tindakan segera untuk mengurangkan peluang pekerja mendapatkan sindrom metabolik untuk memastikan tenaga kerja sihat untuk jangka masa panjang.

Kata kunci: Konflik keluarga kerja (WFC), Risiko Sindrom Metabolik, Keluarga Pengaruh Kerja (WIF), Kerja Pengaruh Keluarga (FIW)

© COPYRIGHT UPM

TABLE OF CONTENTS

	Page
DECLARATION	ii
SIGNATURE OF SUPEVISOR/ INTERNAL EXAMINER	iii
ACKNOLEDGEMENT	iv
ABSTRACT	v
ABSTRAK	vi
CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF APPENDICES	xii
LIST OF ABBREVIATIONS	xiii

CHAPTER 1: INTRODUCTION

1.1	Background	1
1.2	Problem Statement	4
1.3	Research Justification	7
1.4	Conceptual Framework	9
1.5	Research Question	11
1.6	Objectives	11
1.7	Hypothesis	12
1.8	Definition of Terms	12

© COPYRIGHT UPM

CHAPTER 2: LITERATURE REVIEW

2.1	Work Family Conflict	16
2.2	Metabolic Syndrome Risk	17
2.3	Socio demographic status as a risk factor for work family conflict	18
2.4	Working Characteristics as a risk factor for work family conflict	20
2.5	Behavioral Lifestyles as a risk factor for work family conflict	20
2.6	Work Family Conflict as a risk factor for work family conflict	20

CHAPTER 3: METHDOLOGY

3.1	Study Design	22
3.2	Study Location	22
3.3	Study Sample	23
3.4	Study Instruments	28
3.5	Data Collection Procedure	35
3.6	Data Analysis	37
3.7	Quality Control	38
3.8	Ethical Consideration	39

CHAPTER 4: RESULTS

4.1.1	Socio-demographic of respondents	40
4.1.2	Working Characteristics of the Respondents	42
4.1.3	Behavior Lifestyle of the Respondents	43
4.1.4	Work Family Conflict of the Respondents	45
4.2.1	Mean Comparison of Variables in Metabolic Syndrome Risk (Body Mass Index, Blood Pressure and Waist Circumference) of the respondents	46

© COPYRIGHT UPM

between Male and Female Workers in Immigration Department.

4.3.1 The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Body Mass Index (BMI) among Officers in Immigration Department 47

4.3.2 The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Blood Pressure among Officers in Immigration Department. 55

4.3.3 The Correlation between Work Family Conflict Category and Metabolic Risk among Officers in Immigration 61

CHAPTER 5: DISCUSSION

5.1. Comparison between metabolic syndrome risk between male and female officers in immigration. 62

5.2 The association between socio demographic and metabolic syndrome risk among officers in immigration. 62

5.3 The association between work characteristics and metabolic syndrome risk among officers in immigration. 63

5.4 The association between behavior lifestyle and metabolic syndrome risk among officers in immigration. 64

CHAPTER 6: CONCLUSION 65

REFERENCES 67

APPENDICES 79

© COPYRIGHT UPM

LIST OF TABLES

		Page
Table 3.1	Procedures to measure the weight of the respondents	30
Table 3.2	Procedures to measure the height of the respondents	31
Table 3.3	Procedures to measure the blood pressure of the respondents	33
Table 3.4	Procedures to measure the waist circumference of the respondents	34
Table 3.5	List of the data analysis for the study	37
Table 4.1	Distribution of Socio-demographic Information of the respondents	41
Table 4.2	Descriptive Analysis for Working Characteristics of the respondents	42
Table 4.3	Descriptive Analysis for Behavioral Lifestyles of the respondents	44
Table 4.4	Descriptive Analysis for Work Family Conflict of the respondents	45
Table 4.5	Association between socio demographic with BMI among male and female workers in immigration department	47
Table 4.6	Association between socio demographic with BMI among workers in different department in immigration department.	49

© COPYRIGHT UPM

LIST OF FIGURES

		Page
Figure 1.1	Conceptual Framework	10
Figure 2.1	Map of Study location	23
Figure 3.1	Study flow	27
Figure 3.5	Flow of Data Collection	36

© COPYRIGHT UPM

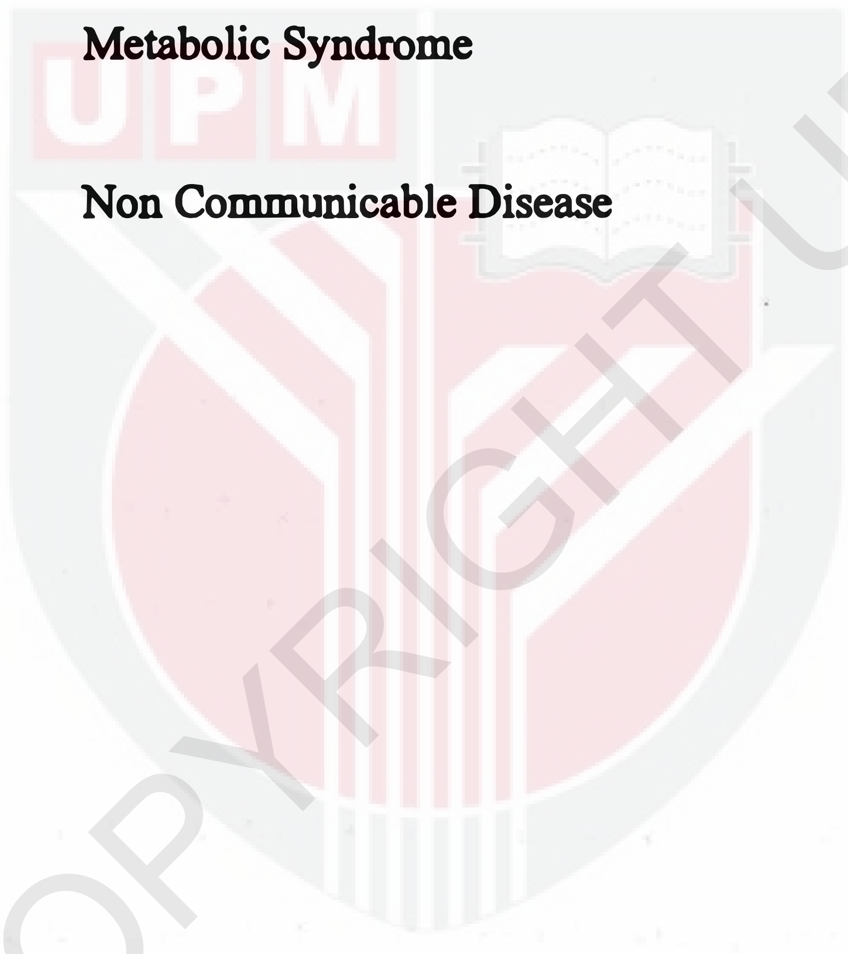
LIST OF APPENDICES

		Page
Appendix A	Conceptual Framework of the study	80
Appendix B	Questionnaire	84
Appendix C	Ethical Committee Approval	92
Appendix D	Aproval from the Immigration Department Malaysia	97

© COPYRIGHT UPM

LIST OF ABBREVATIONS

WFC	Work Family Conflict
BMI	Body Mass Index
BP	Blood Pressure
METS	Metabolic Syndrome
NCD	Non Communicable Disease



© COPYRIGHT UPM

CHAPTER 1

INTRODUCTION

1.1 Study Background

Metabolic syndrome risk is known as the clustering of several metabolic abnormalities; centrally distributed obesity, low high density lipoprotein cholesterol (HDL-C), elevated triglycerides, high blood pressure, and hyperglycaemia (Zimmet, P. et al., 2015). In a study based in Malaysia, the prevalence of metabolic syndrome according to IDF, NCEP ATP III, and WHO definitions were 22.9%, 16.5% and 6.4%, respectively (Tan et al., 2008). Metabolic syndrome risks can be diagnosed according to several different criteria such as the latest International Diabetes Federation (IDF), National Cholesterol Education Program Adult Treatment Program III (NCEP ATPIII), and World Health Organization (WHO).

The metabolic syndrome risk comprises a collection of cardiovascular disease risks, which has been demonstrated to predict type 2 diabetes mellitus and cardiovascular disease. Metabolic syndrome is a crucial health concern in Malaysia, with a prevalence of about 42.5% in the general population based on the 'Harmonized' definition (Chee et al., 2015). Empirical evidence also confirms that work-family conflict is often a severe stress factor at work leading to various negative outcomes, including impaired well-being (Karatepe & Tekinkus, 2006). Researchers have identified work-family conflict as one of the major stressors in the workplace in the United States (Allen, Herts, Bruck, & Sutton, 2000; Frone, 2003). Work–family conflict has two directions and work-to-family conflict (WFC) occurs when experiences and commitments at work interfere with family life, and family-to-work

© COPYRIGHT UPM

conflict (FWC) arises when family responsibility interferes with work life. The negative consequences of work–family conflict for women and their families have been well established (Allen et al., 2000; Aryee et al., 2005; Amstad et al., 2011).

Work and family are most important parts in human life that are not easily separated. When trying to balance between the work and family, the employees often ended with conflict and dilemma in giving priority to both career and family. The incompatible of demand between career and family seemed to create a personal pressure to the employees. More often than not, conflict tends to create pressure to the employees as they try to balance the two roles that need to be performed simultaneously (Jamadin et al., 2015). Previous researchers have shown that work-family conflict (WFC) affects the level of a person's job satisfaction, life satisfaction, and job burnout and intentions to leave the profession (Kossek & Ozeki, 2001). The role of an immigration officer can be quite challenging. It takes some compassion, integrity, and diligence to be successful at this job. The duties and responsibilities of an immigration officer: As an immigration officer, they are responsible for checking visas and residency applications according to immigration legislation, rules and policies, and, where necessary, uses legal powers to detain and remove illegal entrants. They monitored the people entering and exiting the country at key entry points such as airports or land crossings (Ministry of Home Affairs, 2019). In addition, the responsibilities of each immigration officer may vary depending on which country they are posted in and the type of job profile they demand for. This also shows that being an immigration officer they had to face a lot of burden of work with addition of work conflict and responsibilities to family. However, WFC and its consequences have not yet been fully investigated among immigration officers. Thus, as mentioned

© COPYRIGHT UPM

earlier, the main goal of this research (and the gap that it is designed to fill) is to draw a better understanding of the association between work family conflicts and risk factors of metabolic syndrome.

According to Gill & Davidson, (2001) the finding of the study stated that, men have assumed more family responsibilities, in part due to high rates of divorce resulting in increased involvement in single parenting. As a result, many men, like women, are beginning to experience increased levels of stress and conflict as they juggle work and parenting responsibilities (Tennant & Sperry, 2003). Overall, researchers are recognizing that work-family conflict is a complex, multi-dimensional construct. Work-family conflict is conceptualized as a construct with dual direction (work-to-family and family-to-work), multiple forms (time-based, strain-based, and behaviour-based) and specific to multiple life roles (e.g., spouse, parental, elder care, home care, and leisure).

Based on a national survey conducted among the general Malaysian population (Wan Nazaimoon Wan Mohamud et al., 2011), 40.2% of men and 43.7% of women were reported with metabolic syndrome. However, the prevalence of metabolic syndrome among government employees (Immigration Officers) in Malaysia, specifically in Putrajaya, Kuala Lumpur, Selangor and Kuala Lumpur International Airport (KLIA), were not sufficiently known. Metabolic syndrome is defined as the presence of numerous risk factors that include abdominal obesity, atherogenic dyslipidemia, raised blood pressure and plasma glucose (Gami et al. 2007; Grundy 2007). National Health and Morbidity Survey in 2015 by Ministry of Health Malaysia stated that there was 6.1 million Malaysian (30%) above 18 have hypertension and 1

© COPYRIGHT UPM

in 5 people have no idea they have hypertension. Non-Communicable Diseases (NCDs) now contribute to an estimated 73% of total deaths in Malaysia, with the biggest contributor being cardiovascular diseases that include heart attacks and strokes. An estimated 35% of deaths occur in individuals aged less than 60 years, which are mainly our working population.

1.2 Problem statement

Research of interrole conflicts between the work and family domains is characterized by a paucity of theory. The field has been dominated by the role theory developed by Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964). Although this theory does not address the actual behaviours and interactions among the actors involved in the event of interrole conflict (e.g., interactions between husband and wife or employee and supervisor), it offers a good theoretical framework for examining the sources and the potential outcomes of work-family conflict and their relations. Empirical studies have generated evidence for the applicability of this theory. The role theory stated that, conflicting expectations associated with different roles have detrimental effects on well-being. Role theory predicts that multiple roles lead to role conflict, which in turn results in strain. The important aspect of this theory is the scarcity model of roles (Goode, 1960). This model suggests that the resources (i.e. time, energy) of the individual is limited and that multiple roles inevitably reduce the resources available to meet all role demands, thus leading to interrole conflict, which functions as a stressor and subsequently causes strain (Rizzo, *et al.*, 1970). Since there was no study about work family conflict among immigration officers, so this issue was taken into consideration in this study.

© COPYRIGHT UPM

PERPUSTAKAAN PERUBATAN DAN SAINS KESIHATAN
UNIVERSITI PUTRA MALAYSIA

Despite broader coverage of multidisciplinary work-family research, issues related to work and family interface were still not well understood. Consequently, the implementation of work-family policies has been ineffective in reducing conflict experienced by those who juggle multiple roles. This study was devised to analyse the level of work-family conflict among service employees in Malaysia as well as to examine the association between work-family conflict and metabolic syndrome risks.

Psychological and physiological health of the workers are central to a prosperous future of Malaysian industry. However, Malaysian organizations are facing a growing work-related stress concern with 70% of the Malaysian employees affected by high work-related stress with 5.8 million people affected by hypertension (ILO, 2016). With the rate at which hypertension is accelerating due to such risks, it becomes a public health emergency worldwide. As observed in developing countries, the projection is that, by year 2025, there will be an increase of 80% in the number of hypertensive individuals (P. M. Kearney et al., 2005). This is important reasons for the need to conduct this study on the association of hypertension and work family conflict among workers in Malaysia.

Obesity is chosen as the metabolic syndrome risk based on a study conducted in U.K. which indicated that Malaysian is considered the most obese nation in Asian counties with the obesity rate is almost 45.3% (WHO, 2014). Epidemiological studies (Ng et al., 2014; NCD Risk Factor Collaboration, 2016) have identified obesity as among the most serious health challenges worldwide. While obesity has been viewed as a multifactorial disease (Morris et al., 2015), evidence suggests that the rise of the

© COPYRIGHT UPM

obesity pandemic is the result of lifestyles changes rather than genetic influences (Swinburn, Sacks, & Rvussin, 2009). In the past five years, the prevalence of obesity among adults in Malaysia showed a continuing increase of the problem, although a slower increament rate has been reported by the National Health and Morbidity Survey Malaysia (NHMS) 2011 and 2015.

According to Official portal Department of Statistic Malaysia, our country Malaysia like other developing countries is experiencing an upsurge in cardiovascular morbidity and mortality. The emergence of cardiovascular disease as a leading cause of death in Malaysia runs parallel with the rapid economic growth and associated socio-demographic change that has occurred over the past few decades. Thus, achieving blood pressure (BP) control and prevention of cardiovascular morbidity and mortality is vital and should be strived for, as many effective and inexpensive BP treatments options are now available (Abdul Razak et al., 2016).

High blood pressure (hypertension) is an established risk factor of metabolic syndrome and is the leading risk factors for mortality (13%) of deaths globally (Gurpreet et al. 2012). National Health and Morbidity Survey (2015) has stated that there were about 30% or about 6.1 million of Malaysian have hypertension. The metabolic syndrome risks were a cluster of the most dangerous heart attack risk factors: diabetes and raised fasting plasma glucose, abdominal obesity, high cholesterol and high blood pressure (International Diabetes Federation, 2006). So due to there is insufficient study has been conducting previously, thus this study will be conducted in order to find the association between work family conflict and metabolic

© COPYRIGHT UPM

syndrome risk, which is hypertension among immigration officers in different department in Malaysia.

1.3 Study Justification

A first step in unravelling the relationship between psychosocial risk factors and the metabolic syndrome risks were to explore their cross-sectional association. In addition, it was important to know whether psychosocial risk factors co-occur with the metabolic syndrome risk. Treatment of both metabolic syndrome and psychosocial stress may be less effective if accompanying problems are ignored. Until now, few studies have examined the link between psychosocial risk factors and the metabolic syndrome risks directly. The present study investigates the association between psychosocial risk factors, as indicated by depression, anxiety, recent life events, and experienced inadequate emotional support, and the metabolic syndrome risks.

In Malaysia, most of the previous study in metabolic syndrome risk was conducted involving the local community. This study focused on 2 metabolic syndrome risks which consist of high blood pressure (hypertension) and obesity. The data of this study helps to show the raw data about the association of the risk factors such as socio-demographic status, working characteristic, behavioural lifestyle and work-family conflict factors with metabolic syndrome risk among workers in immigration department.

© COPYRIGHT UPM

Since the obesity become current concerned among Malaysian, because it keep increased from year to year,. Moreover, Malaysia is considered as one of the most obese nation in Asia and due to limited number of study about obesity among immigration officers in Malaysia, this study has looked for the association between socio-demographic status, working characteristics, behaviour lifestyle and work family conflict factors with metabolic syndrome risk, which is obesity among immigration officers between different departments.

The psychosocial factors are also considered in this study to look into the work related stress among the workers. In previous study (Panatik et al. 2011), the study among school teachers, the finding also found that there is no difference in terms of level of work-family conflict based on type of school and gender. This means that type of school and gender did not influence the level of work-family conflict. However, finding stated that is the difference in level of work-family conflict in terms of marital status. Interestingly, the finding shows that the single person has a higher level of work-family conflict compared to the married person. This can be explained by the amount of work received by the unmarried teacher compared to the married teacher. In addition, the general impression about the single life which assumes having more leisure and free time, thus increasing the tendency to get more works compared to the married teacher. Apart from that, the study identified the existence of significant relationship between work-family conflict, mental health, and turnover intention. The result was consistent with the previous research that found negative relationship between work-family and mental health (Joseph, et al., 2007; Poelmans, 2001).

© COPYRIGHT UPM

The finding of this study can be used to increase awareness of the metabolic syndrome among the immigration officers in the government field especially those who have work family conflict. The immigration officers also should be able to identify any control measure to mitigate this problem as mentioned in Act 514, Section 15(1) OSHA 1994, It shall be duty of every employer of self-employed to ensure so far as is practicable, the safety, health and welfare at work of all of his employees. This is to maintain the manpower in the immigration field of work and in order to help them stay in good health condition.

1. 4 Conceptual framework

Figure 1.1 shows the conceptual framework of this research. Conceptual framework describes the concept in this study. The research was focused on immigration officers in Selangor as the study population. There were three independent variables in this study which includes of socio demographic status, behavioural lifestyle and working characteristics. For socio demographic status, the elements in this study were age, gender, level of education, monthly income, marital status and family history disease and chronic diseases.

© COPYRIGHT UPM

1000688127

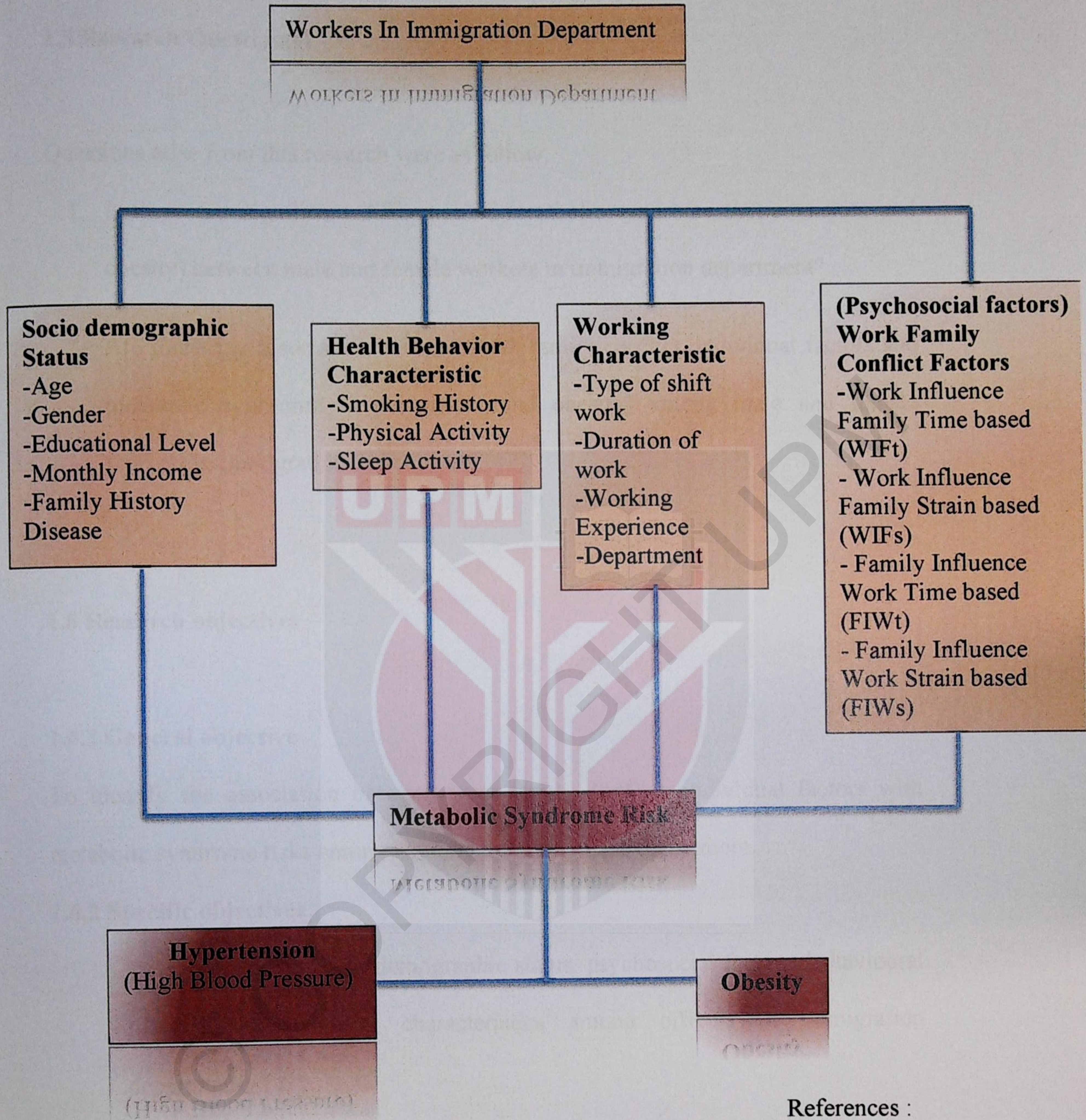


Figure 2.1 Conceptual Framework

1.5 Research Question(s)

Questions arise from this research were as follow:

1. Is there any significant difference of metabolic syndrome (hypertension, and obesity) between male and female workers in immigration department?

2. Are there any association between work family conflict, individual factors and metabolic syndrome (hypertension, and obesity) among male and female workers in immigration department?

1.6 Research objectives

1.6.1 General objective

To identify the association between work-family conflict, individual factors with metabolic syndrome risks among workers in immigration department.

1.6.2 Specific objectives

1. To determine the socio demographic status, psychosocial factors, behavioural lifestyle and working characteristics among officers in immigration department.

2. To measure the difference of mean of metabolic syndrome risks (hypertension, and obesity) between male and female officers in immigration department.

3. To measure the association between work family conflict (socio demographic status, psychosocial factors, behavioural lifestyle and working characteristics)

© COPYRIGHT UPM

with metabolic syndrome risks (hypertension, and obesity) among officers in immigration department.

1.7 Study Hypothesis

1. There is significant difference of mean metabolic syndrome (hypertension, and obesity) between male and female officers in immigration department.

2. There is significant association between socio demographic status, psychosocial factors, behavioural lifestyle and working characteristics with metabolic syndrome (hypertension, and obesity) among officers in immigration department.

1.8 Definition of Terms

1.8.1 Conceptual Definition

Work Family Conflict

Work-family conflict is defined as a form of inter role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role (Greenhaus & Beutell 1985).

© COPYRIGHT UPM

Metabolic Syndrome Risk

Metabolic syndrome risk is a multiplex risk factor for cardiovascular disease (CVD) that is deserving of more clinical attention (The National Cholesterol Education Program's Adult Treatment Panel III report (ATP III), 2002). Abnormal metabolic syndrome is defined as hypertension, diabetes, dyslipidemia (low high-density lipoprotein cholesterol or high triglyceride levels), hypercholesterolemia (high total or low-density lipoprotein cholesterol), and abdominal pain.

Officers in Immigration Officers

According to Oxford dictionary, officer means a person holding a position of authority, especially one with a commission, in the armed services, the mercantile marine, or on a passenger ship. Whereas the immigration definition according to Cambridge dictionary is the process of examining the passport and other documents to make certain that people were allowed to enter the country. The Immigration Department was placed under the Ministry of Foreign Affairs in 1957. With effect from 1964, the Immigration Department is placed under the Ministry of Home Affairs.

© COPYRIGHT UPM

1.8.2 Operational Definition

Work Family Conflict

Work family conflict is characterised by the presence of at least three of the following five risk factors: Central obesity, high serum triglycerides, low high density lipoprotein cholesterol (HDL-C), raised blood pressure and raised fasting blood sugar. Work family conflict measured in this study were the workers that working in different unit in the office of Immigration in Putrajaya, Shah Alam, Kuala Lumpur and Kuala Lumpur International Airport (KLIA). The different department were selected by using purposive sampling because of the different job scope and working burden faced by the officers. The workers in immigration department were obtained from the head of department management upon their approval. The standard questionnaires were used to segregate the work family conflict faced by officers between male and female officers.

© COPYRIGHT UPM

Metabolic Syndrome Risk

Metabolic syndromes risk in this study were high blood pressure (hypertension), and abdominal obesity. High blood pressure was measured by using an Automatic high blood pressure monitor and abdominal obesity was measured by using weight and height scale (Stadiometer) to obtain the body mass index (BMI) of the respondents. The total pressure level that classified as

under hypertension is 140mm for systolic and below 90Hg for diastolic reading and for BMI, the obesity BMI classification is more than 27.5 kg/m^2.

Oficers in Immigration Department

The officers in Immigration Department will be choosing from different divisions based on the inclusion and exclusion criteria of this study. The division selected by using simple random sampling method, the divisions that are selected Human Resource Division, Administration Division, Policy and Strategic Planning Division, Foreign Workers Division, Quality Management & ISO Division, Security and Passport Division, Visa, Pass and Permit Division and other divisions.

© COPYRIGHT UPM

CHAPTER 2

LITERATURE REVIEW

2.1 Metabolic Syndrome Risk

Globally, metabolic syndrome risk leads proportional mortality for non-communicable disease with Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually and diabetes (1.6 million) (World Health Organization, 2018). Abnormal of metabolic risk were defined as hypertension (blood pressure systolic above 160mmHg or diastolic above 90mmHg), diabetes, dyslipidemia (low high-density lipoprotein cholesterol or high triglyceride levels), hypercholesterolemia (high total or low-density lipoprotein cholesterol), and abdominal obesity. (Paynter, 2015). 36% cases of metabolic syndrome disease lead to mortality for non-communicable disease (World Health Organization, 2014).

Amiri et al. (2014) have stated that hypertension with prevalence of (39.3%) was the most common cardiovascular risk factors among low-income respondents of urban community in Malaysia. A national health morbidity survey (NHMS) conducted in 2015 among adults aged more than or 18 years reported that the overall prevalence of hypertension (known and undiagnosed) was 30.3%. Another hypertension study conducted a decade ago reported that the overall prevalence among individuals aged more than 15 years were 27.8 % respectively (Rampal et al., 2008).

Obesity may develop hypertension, diabetes and atherosclerosis (World Health Organization, 2016). This condition may develop metabolic syndrome risk. Obesity is one of the risk factors of metabolic syndrome. According to MyHEALTH Ministry of Health (2014), the normal body mass index (BMI) is in range 18.5-22.9, 23-27.4 considered as overweight and 27.5 known as obese. The Fourth National Health and Morbidity Survey of Malaysia (2011), obesity and hypertension risks factors in Malaysia accounted for 27.2% and 32.7% respectively. Epidemiological studies (Ng et al., 2014; NCD Risk Factor Collaboration, 2016) have identified obesity as among the most serious health challenges worldwide. While obesity has been viewed as a multifactorial disease (Morris, Beilharz, Maniam, Reichelt, & Westbrook, 2015), evidence suggests that the rise of the obesity pandemic is the result of lifestyles changes rather than genetic influences (Swinburn, Sacks, & Ravussin, 2009). For this reason, research on stress-induced eating (Greeno & Wing, 1994; Torres & Nowson, 2007) has received significant attention and has been used to explain obesity.

While the prevalence of overweight and obesity has been reported to be lowest in Asian countries worldwide (Ng et al., 2014), studies (Wen et al., 2009) have indicated that Asian populations have different associations between BMI, percentage of body fat, and health risks than Western populations. In particular, Wen et al. (2009) found that overweight Asians showed an increase in all causes of mortality risk compared with overweight Caucasians. Malaysia has been categorized as a successful developing country characterized by a rapid phase of industrialization and urbanization. Accompanying this progression is a major change in dietary pattern (Jamal et al., 2015), which in turn has led to a rising trend in major health problems.

© COPYRIGHT UPM

Statistics showed that Malaysia has the highest prevalence of obesity in the Asian region (Ng et al., 2014). In particular, while the Second National Health Morbidity Survey (NHMS II) reported a prevalence of 17% and 4% of adults being overweight and obese, respectively, in 1996 (Institute of Public Health, 1998), the NHMS report in 2015 reported an increase to 30% and 17.7%, respectively; the latter statistics indicate that one in two adult Malaysians are either overweight or obese (Institute for Public Health, 2015). Norris et al. (2014) stated that a stressful lifestyle resulting from social and economic changes has been identified as a pivotal barrier to healthier lifestyles among Malaysian adults. Working conditions in Malaysia are similar to those in Western countries in terms of high workloads, increased shift work and low payment rates. However, as opposed to westerners, Malaysian working organizations are often characterized by lack of initiatives to tackle work life balance issues (Hassan & Dollard, 2007).

2.3 Socio demographic status as a metabolic syndrome risk

2.3.1 Age

The World Heart Federation (2012) explained that metabolic syndrome more common with increasing age. As a person grew older, the heart undergoes some psychologic changes, even in the absence of disease. When a condition like metabolic syndrome affects the heart, these age-related changes may compound the problem or its treatment (World Heart Federation, 2012). Amiri et al. (2014) stated that the urban population in Malaysia that aged 50 year and 60 years old had the highest prevalence of hypertension (63.7% and 73.4% respectively) because the heart undergoes subtle

© COPYRIGHT UPM

physiologic changes when a person got older, while obesity was the highest prevalence (64.3%) for metabolic risk among middle-aged adults who were 40's. Mohamud et al. and Chee et al. estimated that the risk of metabolic syndrome increased by 3% for every year increase in age.

2.3.2 Gender

Chia Yook Chin (2009) stated that 55.8% of the men had more than 20% risk compare to women that have lower risk, with 15.1% having a risk of more than 20% among semirural community in Malaysia. In other study, Rampal et al. (2012) shows that females have a higher prevalence of metabolic syndrome. Overall the prevalence was 30.1% among females and 24.1% among males.

2.3.3 Educational Level

Those with more education may be better informed about good health practices and adopt healthier behaviours (Live Science, 2010). According to Live Science (2010), the previous study had found a link between completed levels of formal education and risk of heart disease which included populations in high, low, and middle- income countries. In a study of Prevalence and Determinants Cardiovascular disease risk factor among residents of urban community housing projects in Malaysia, Amiri et al. (2014) stated that a highest prevalence of at least one metabolic syndrome risk factor among Malaysian are the group with a primary education only.

© COPYRIGHT UPM

2.3.4 Total Monthly Income

A rising incomes have been responsible for 75% of the increase in life expectancy observed in the past 50 years (WHO, 2014). The low income and poor communities in Malaysia had higher prevalence of metabolic syndrome risk factors (Rasiah et al. 2013). Moreover, Azmi et al. (2009) found that most of obese people were from high income adults based in the finding on Body Mass Index (BMI) of adults: Findings of Malaysian Adults Nutrition Surveys.

2.4 Working Characteristic as a metabolic syndrome risk

Thomas et al. (2009) indicate that numerous life indicators of metabolic syndrome have been identified, including prenatal, socio-economics, environmental, physical, cognitive and behavioural factors, it is possible that associations seen for work characteristics arise through pre-existing CVD. According to Clougherty et al. (2009) the increase in stringency of hypertension for hourly employees (blue-collar; mainly production) compared to salaried (white-collar; production, supervisor or administration).

2.5 Behavioral lifestyles as metabolic syndrome risk

2.5.1 Tobacco use

Smoking is estimated to cause nearly 10% of all metabolic disease (Mendis, 2011). Smoking damages the lining of smoker arteries, leading to a built up of fatty

© COPYRIGHT UPM

tissue (atheroma) which will narrows the artery and caused angina, a heart attack or stroke (British Heart Foundation, 2017). Younger smoking respondents had higher prevalence in hypercholesterolemia, 30 years and 40 years old accounted for 21.1% and 19.2% respectively (Amiri et al. 2014).

2.5.2 Physical Inactivity

According to Moore (2014) regular exercise is an important way to lower therisk of heart disease. Physical activity can strength the heart muscle by improves heart's ability to pump blood to the lungs and throughout the body (National Heart Lung and Blood Institute, 2016). Physical inactivity is more damaging to health condition (Amiri et al. 2014). Chu and Moy (2013) found that subjects who sat for ≥9.3 hours a day had a 3.8-fold risk of having metabolic syndrome compared to those who sat ≤6 hours a day. Chee et al. (2014) found that those in the 'maintenance' stage of doing regular exercise were 17 times less likely to have metabolic syndrome compared to those who have not even contemplated exercising.

© COPYRIGHT UPM

CHAPTER 3

METHODOLOGY

3.1 Study Design

A cross-sectional study design was used to reach the research aims. Cross-sectional designs entail the collection of data on more than one case at a single point in time, after which the data are examined to detect patterns of association (Bryman & Bell, 2003). The cross sectional study design was used among different division of Immigration officers in Putrajaya, Shah Alam, Kuala Lumpur and Kuala Lumpur International Airport (KLIA). The study was conducted from February 2019 until March 2019.

3.2 Study Location

This study was carried out at Immigration Office in Putrajaya, Shah Alam, Kuala Lumpur and Kuala Lumpur International Airport (KLIA); after the selection of the department by using purposive sampling design among other 16 branch of Immigration Office. The Department of Immigration of Putrajaya, Shah Alam, Kuala Lumpur and KLIA were chosen due to the number of workers in each department can meet the sample size for sampling. There were more than 30 divisions in immigration department, thus the purposive sampling method based on the time-based, strain-based and behavioral based criteria, only several divisions were selected. This method was useful in reducing heterogeneity within the population of immigration officer with regard to characteristics that are correlated with the variables of interest. The

division that were chosen for this study like Human Resource Division, Administration Service Division, Policy and Strategic Planning Division, Quality Management and ISO, Security and Passport Division, Foreign Workers Division, and Visa, Passport Division being choose. The exact location of sampling site is shown in the map below:

Figure 2.1 Map of Study location

3.3 Study Sample

The department is chosen through purposive sampling according to the approval by the Head of the Federal Officer in the Immigration Office. The lists of the divisions in Putrajaya, Shah Alam, Kuala Lumpur and KLIA were obtained from the Official Portal of Immigration Department of Malaysia (Ministry of Home Affairs) and only six divisions were choosed by using purposive random sampling design.

Whereas, the respondents are selected trough simple random sampling based on the following criteria.

The inclusion criteria for this study are gender which divided into both male and female immigration officers. The age also took into account, the officer age range from 20 to 60 years old.

Besides, the exclusive criteria for this study are the officers that has working experience more than one year, must be free from chronic illness (diabetes mellitus and coronary heart disease) and pregnant workers.

Lemesow, Klar & Lawanga (1990) method is used to calculate sample size. The prevalence of high blood pressure (hypertension) and overweight are considered in this study.

© COPYRIGHT UPM

$$N = \frac{\{Z_{1-\alpha/2}\sqrt{2P(1-P)} + Z_{1-\beta}\sqrt{P_1(1-P_1) + P_2(1-P_2)}\}^2}{(P_1 - P_2)^2}$$

$$N = \frac{\{1.96\sqrt{2(0.05)(0.95)} + 0.842\sqrt{(0.44)(0.56) + (0.33)(0.67)}\}^2}{(0.44 - 0.33)^2}$$

N = 115

Where,

PI = Estimated proportion 43.7% (Chee et al., 2014)

P2 = Estimated proportion 32.7% (Institute of Public Health, 2011)

$P = (P_1 - P_2)/2$ $Z_{1-\alpha/2} = 1.96$ $Z_{1-\beta} = 0.842$

$P = 0.05$

The results show that the overall national prevalence of obesity among Malaysians aged 15 years old and above was 11.7% (Rampal et al., 2007). Abdominal obesity was most prevalent (Ismail et al., 2002)

$$N = \frac{\{1.96\sqrt{2(0.15)(0.85)} + 0.842\sqrt{(0.44-0.56)^2 + (0.15)(0.85)^2}}{(0.44-0.15)^2}$$

$N = 7$

Where,

PI = Estimated proportion 43.7% (Lim, K. G. & Cheah, W. K., 2016)

P2 = Estimated proportion 15.4% (Ismail et al., 2002)

$P = (P_1 - P_2)/2$ $Z_{1-\alpha/2} = 1.96$ $Z_{1-\beta} = 0.842$

$P = 0.15$

Prevalence of hypertension was more prevalent in women and increased with age (Chee et al., 2014). The prevalence of hypertension was the highest rate was found in the 40–49 years age, the study group was the rural households located in the Kuching and Samarahan divisions of Sarawak among individuals aged 16 years and above (Whye L.C., 2011).

$$N = \frac{\{1.96\sqrt{2(0.29)(0.71)} + 0.842\sqrt{(0.80)(0.20) + (0.22)(0.78)}\}^2}{(0.80-0.22)^2}$$

$N = 9$

Where,

PI = Estimated proportion 79.8% (Lim K. G. & Cheah W. K., 2016)

P2 = Estimated proportion 21.6% (Ismail et al., 2002)

$P = (P_1 - P_2)/2$ $Z_{1-\alpha/2} = 1.96$ $Z_{1-\beta} = 0.842$

© COPYRIGHT UPM

P = 0.29

The highest sample, N obtained is then added to 10% of its value.

=10% of N

=10/100 X N

=10/100 X 115

=12

Total number respondents are calculated as follows:

=N + 10% of N

=115 + 12

=127

=127x 2 (two groups of study population).

=254

The study samples that will be chosen among Immigration Officers are 254.

© COPYRIGHT UPM

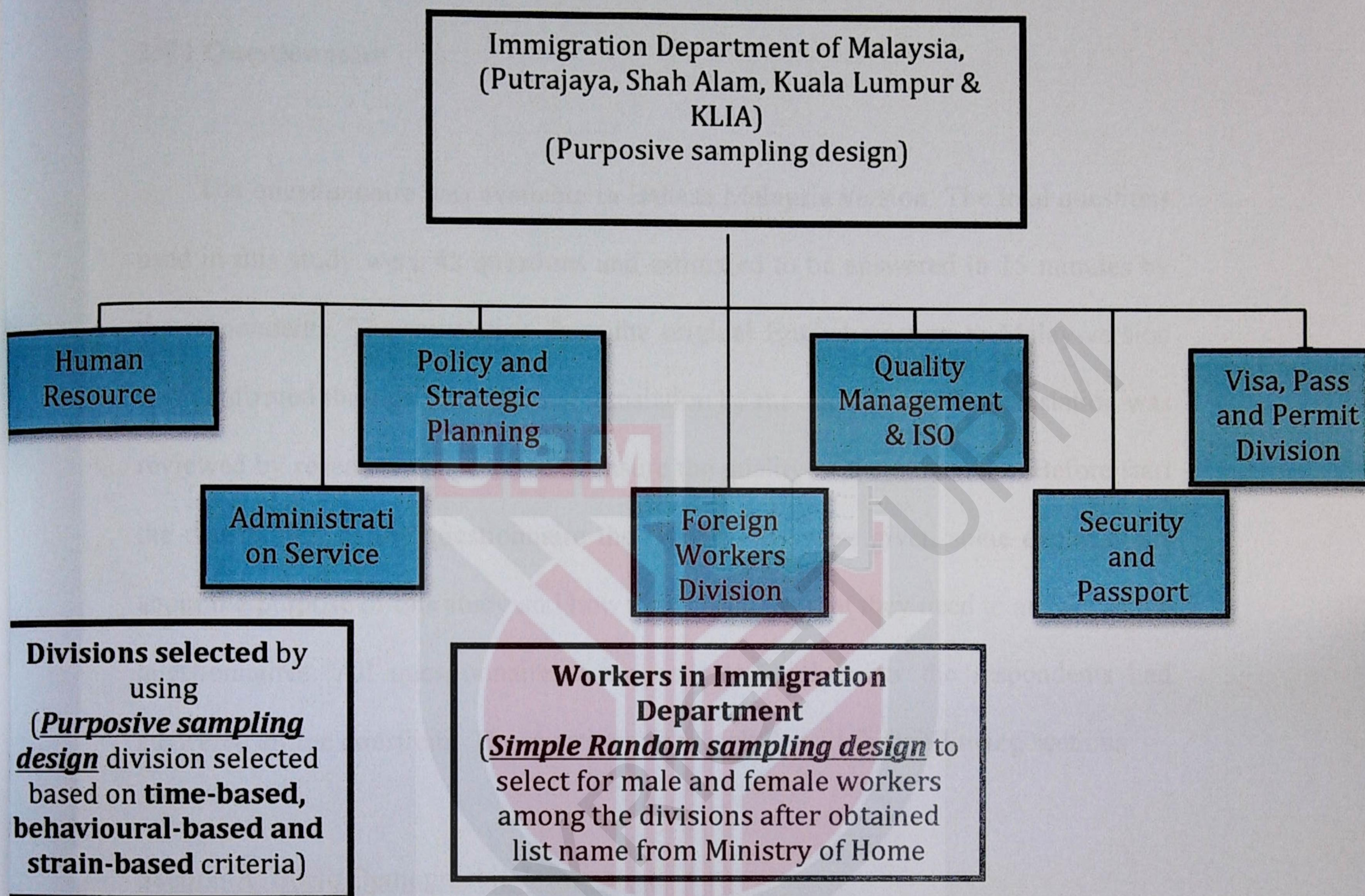


Figure 3.1 Study flow

© COPYRIGHT UPM

3.4 Study Instruments

3.4.1 Questionnaire

The questionnaire was available in Bahasa Malaysia version. The total questions used in this study were 42 questions and estimated to be answered in 15 minutes by the respondents. The translation from the original English-version to Malay-version was confirmed through back to back translation by the supervisor. The translation was reviewed by research's supervisor to ensure the quality of the translation. Before start the distribution of the questionnaire the respondents were given some explanations about the purpose of this study and how many sections that they need to answer in the questionnaires. All questionnaires were collected right after the respondents had answered all the questions. The questionnaires included all four following sections:

Section A: Socio Demographic Information

The aim of this section is to gain an overall understanding about the general information related to age, gender, education level, total monthly income, family history disease and chronic disease record.

Section B: Working Characteristics

This section requires the respondents to give information on the types of shift, working departments, working experiences, and working duration.

© COPYRIGHT UPM

Section C: Behavioral Lifestyle

This section requires the respondents to give information about their behavioural lifestyle that included the use of tobacco, physical activity, alcohol consumption and also sleep quality. The questionnare were adapted from previous study (Izyan, 2015).

Section D: Psychosocial Factors (work-family conflict)

Kelloway et al. (1999) to measure the interface between work and family. The questionnaire contained 22-items questionnaire that can measure time-based and strain-based conflict and has the ability to distinguish between WIF and FIW directions. Work-family conflict is considered as a bi-directional nature in which work obligations interfere with family demands (WIF) and conversely, family responsibilities interfere with work demands (FIW). However, each direction consists of tripartite dimensions: time-based, behaviour-based, and strain-based conflict. This 22-items questionnaire has Likert-type answers that range from 1 (strongly disagree) to 5 (strongly agree). The questionnaire covers four dimensions: time-based WIF, strain based WIF, time-based FIW, and strain-based FIW. Time-based WIF and FIW contain five questions per each dimension, for a total score range of 5–25. A higher score indicates a high level of time-conflict between work and family. Strain based WIF and FIW contain six questions per each dimension, for a total score range of 6–30. A higher score indicates a high level of strain or conflict between work and family. Based on the previous study by (Sanaz, Syaqirah & Khadijah, 2014) the Cronbach's alpha internal consistency ranged from 0.76 to 0.89 which shows adequate

© COPYRIGHT UPM

evidence for reliability of the Malay version of work-family conflict questionnaire. The Cronbach's alpha value indicated that strong realibility of the questionnaire.

3.4.2 Weight Scale

OMRON HBF-516B Full Body Sensor was used for weight measurement. The measurement followed the procedures of WHO STEPS Surveillance Part 3: Training and Practical Guides, Guide to Physical Measurements (WHO STEPS Surveillance, 2008). The scales are placed on a firm, flat surface. The measurement is used for Body Mass Index (BMI) calculation (Weight/Height x Height). The weight of respondents are taken at least twice time each to take the average reading of their weight. According to MyHEALTH Ministry of Health (2014), the normal body mass index (BMI) is in range 18.5-22.9, 23-27.4 considered as overweight and 27.5 and 30 known as obese.

Table 3.1: Procedures to measure the weight of the respondents

Step	Action
1.	The respondents were asked to remove their footwear (shoes, slippers, sandals) and socks.
2.	The respondents were stepped onto the scale with one foot on each side of the scale.
3.	The respondents were asked to: -Stand still

© COPYRIGHT UPM

	-Face forward -Place arms on the side and, -Wait until asked to step off
4.	The weights in kilograms (kg) of the respondents were recorded.

3.4.3 Height Scale

Height is measured by SECA 206 measuring tape. The measurement followed the procedures of WHO STEPS Surveillance Part 3: Training and Practical Guides, Guide to Physical Measurements (WHO STEPS Surveillance, 2008). The measuring tape is attached to a rigid wall. The record is used for Body Mass Index (BMI) calculation (Weight/Height x Height). The height of respondents is taken at least twice time each to take the average reading of their height.

Table 3.2: Procedures to measure the height of the respondents

Step	Action
1.	Before start the height measure, the respondents were asked to remove their: -Footwear (shoes, slippers, sandals -Head gear (hat, cap, hair bows, ribbon, comb, etc)
2.	The respondents were asked to stand straight on the board facing the researcher.
3.	While in standing position the respondents were asked to: -stand with both feet together

© COPYRIGHT UPM

	-heels against the back board - knees in straight position
4.	The respondents were asked to stand where the position of body straight ahead with the chin up and not look up.
5.	The eyes level of the respondents were at the same as the ears.
6.	Moved the measure arm gently down onto the head of the respondents and ask the respondents to breathe in and stand tall.
7.	The height was recorded in centimetres (cm) at the exact point.
8.	The respondents were asked to step away from the measuring board.
9.	The height measurement was measured for twice time for the respondents to get the average value and the reading was recorded.

3.4.4 Blood Pressure

Systolic and diastolic pressures were measured by using Omron HEM-7121-Z Automatic Blood Pressure Monitor. The procedure of the measurement followed WHO STEPS Surveillance Part 3: Training and Practical Guides, Guide to Physical Measurements (WHO STEPS Surveillance, 2008). The respondents were prohibited from smoking, lifting heavy burden, going upward or downward the stairs and caffeine-containing drinking for 30 minutes before measurement taken. The measurement was taken with each of respondents asked to sit quietly and rest for 15 minutes with their legs uncrossed. The reading was taken for twice time at least for each measurement to obtain average value.

© COPYRIGHT UPM

Table 3.3: Procedure to measure the blood pressure of the respondents

Step	Action
1.	The respondents were asked to remove place their right arm on the table with the palm facing upwards.
2.	The respondents were ordered to remove or roll up clothing on the right arm.
3.	Select the appropriate cuff size for the respondents using the Arm Circumference (cms) Cuff Size. 17-22 for Small (S) 22-32 for Medium (M) >32 for Large (L)
4.	The cuff were positioned above the elbow aligning the mark ART on the cuff with brachial artery.
5.	The cuff was wrapped snugly onto the arm and secured fasten with the Velcro.
6.	The level of the cuff was kept at the same level as the heart when measurement taken.

© COPYRIGHT UPM

3.4.5 Waist Cimcumference

The WHO STEPS protocol states that, for waist circumference should be measured at the midpoint between the lower margin of the least palpable rib and the top of the iliac crest, using a stretch-resistant tape that provides a constant 100 g

tension (WHO, 2008b). Some studies have assessed the waist circumference at the point of the minimal waist (Ross et al., 2008). The accuracy of waist and hip circumference measurements depends on the tightness of the measuring tape, and on its correct positioning (i.e. parallel to the floor at the level at which the measurement is made). The protocol also recommends the use of a stretch-resistant tape that provides a constant 100 g of tension through the use of a special indicator buckle; use of this type of tape reduces differences in tightness.

Table 3.4: Procedures to measure the waist circumference of the respondents

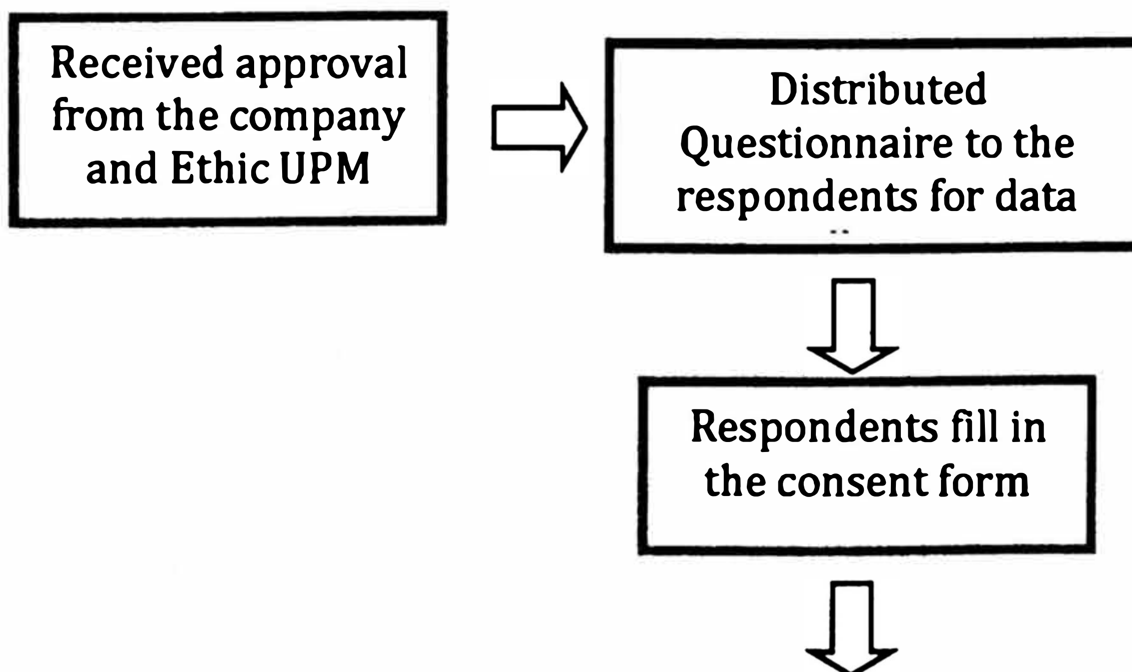
Step	Action
1.	The respondents were asked to stand with arms at the sides, feet positioned close together, and weight evenly distributed across the feet
2.	The waist circumference were measured at the end of a normal expiration, in the condition of the lungs (functional residual capacity)
3.	The researcher gave recommendation to the respondents to relax and take a few deep, natural breaths before the actual measurement was made, to minimize the inward pull of the abdominal contents during the waist measurement
4.	The measurement for waist circumference were measured at the midpoint between the lower margin of the least palpable rib and the top of the iliac crest, using a stretch-resistant tape that provides a constant 100 g tension.

© COPYRIGHT UPM

5.	The waist measurement was measured for twice time for the respondents to get the average value and the reading was recorded.

3.5 Data Collection Prosedure

The study agreed with the approval from the Immigration department. Before data collection proceeds, briefing was given to the respondents by the researcher about the objectives of this study. The briefing was given during walkthrough to choose departments and before the respondents fill the consent form and questionnaire. The respondents need to fill in the consent form letter and hand in to the researcher after it had completed. The list of the respondents was selected by using simple random sampling method for those who meet the criteria in this study. The questionnaire type was self-administered questionnaire. After that, the respondents were selected according to inclusive criteria in this study. The measurement of blood pressure, height, weight and waist circumference were conducted on the selected respondent. Then, SPSS Version 22.0 was used to key in data and analysed.



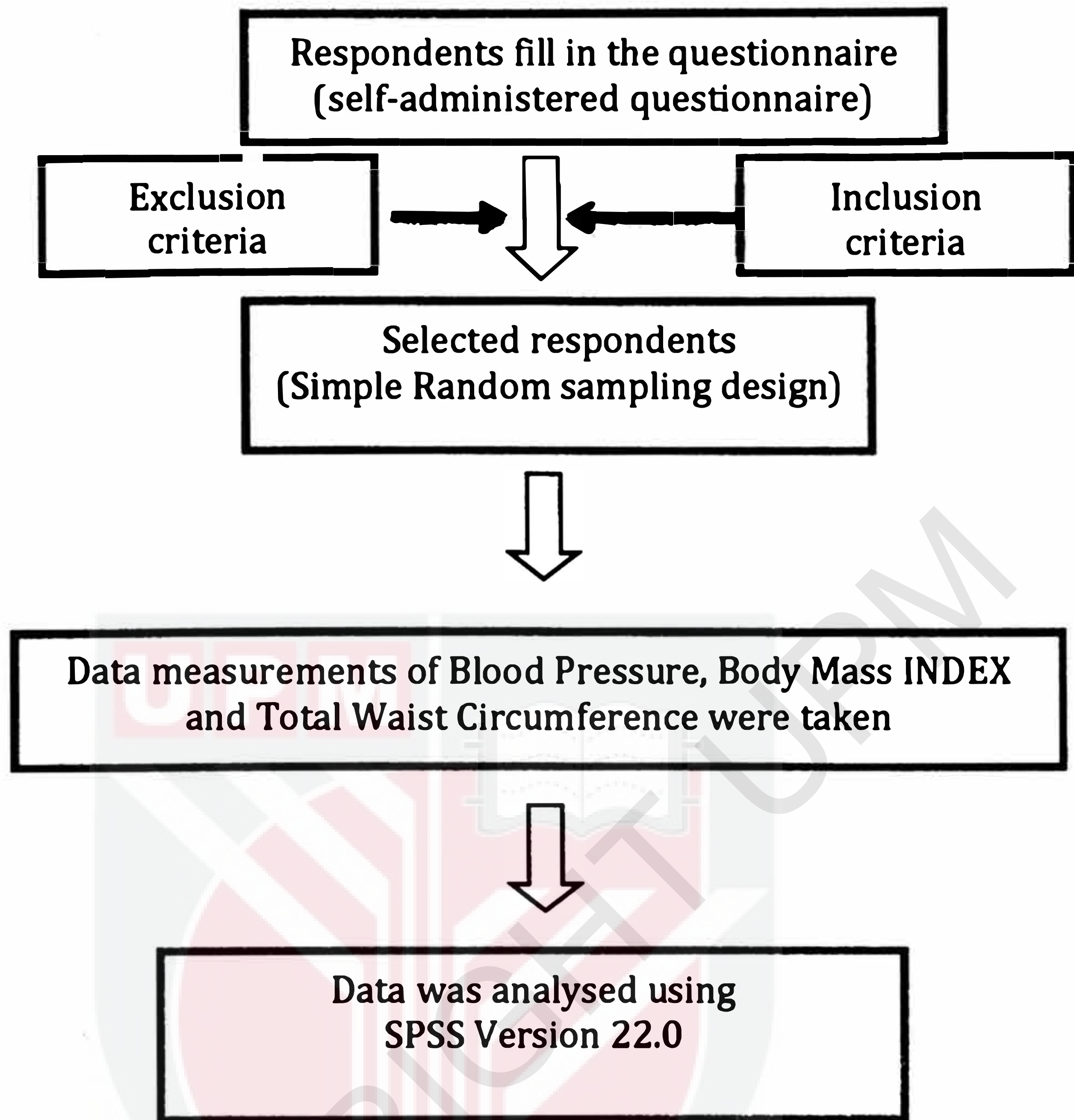


Figure 3.5: Flow of Data Collection

© COPYRIGHT UPM

3.6 Data Analysis

The data obtained were analysed by using IBM SPSS Version 22.0. The type of analysis which was used for this study as shown in Table 1, based on the specific objectives in this study.

Specific Objectives	Parametric Data Analysis	Non-Parametric Data Analysis
To determine the socio demographic status, psychosocial factors, behavioural lifestyle and working characteristics among immigration officers.	Descriptive analysis	Descriptive analysis
To determine the difference of mean of risk factors of metabolic syndrome (hypertension, and obesity) between male and female immigration officers.	Independent t-test	Man-Whitney U Test
To measure the association between work family conflict (socio demographic status, psychosocial factors, behavioural lifestyle and working characteristics) with risk factors of metabolic syndrome (hypertension, and obesity) among officers in immigration department	Chi-Square Test	

© COPYRIGHT UPM

3.7 Quality Control

Before the data collection, researchers need to make sure the instruments used were functioning well. Blood pressure and Body Mass Index procedures of measurement by WHO STEPS Surveillance; Guide to Physical measurements followed respectfully. The measurements were repeated at least two times (measurement of the blood pressure, weight, height and waist circumference) in order to get average value. As the steps to avoid the false reading the respondents were prohibited from smoking and consuming caffeine-containing drinking for 30 minutes before blood pressure monitoring taken, this to obtain the accurate measurement of blood pressure.

Besides, the questionnaire used had been verified by the supervisor before sent for the ethical consideration by ethic committees. The questionnaires were undergoing back to back translation from Bahasa Malaysia and English. The questionnaires were reviewed for completeness filled by respondents.

© COPYRIGHT UPM

3.8 Ethical Consideration

Ethics Committee has been approved this study; this study has been reviewed and approved by Ethic Committee for Research Involving Human Subjects (JKEUPM), University Putra Malaysia. The JKEUPM reference Number was UPM/TNCPI/RMC/1.4.18.2 (JKEUPM). The permission and approval to conduct data collection for this study had been obtained from the Ministry of Home Affair which specifically the Immigration Department of Putrajaya, Shah Alam, Kuala Lumpur and KLIA.

© COPYRIGHT UPM

CHAPTER 4

RESULTS

4.1.1 Socio-demographic of respondents

The whole sample consisted of 254 immigration workers in different department of Immigration of Putrajaya (46.9%), Kuala Lumpur (24.8%), Selangor (24.4%) and Kuala Lumpur International Airport (KLIA) (3.9%) within the aged between 20 to 60 years old in. In order to explore the characteristics of the data, descriptive statistic tests were utilized. The response rate in this study was (100%). The results from the analysis show that 54 percents of the respondents that participated in this study are women that represent 138 respondents. The highest participation among the respondents comes from those that age between 31 to 40 years old that represents 51 percents. Married respondents are the higher contributor in providing a response to this study with a percentage of 78 percents which is 197 respondents. For education level, 40.9% of respondents completed secondary school as their highest education level and 59.1% had completed college or university. Their monthly income were in range from RM2000 to RM2999 per month which represented 52.0% of total monthly income.

There were (45.7%) male and (54.3%) female respondents involved in this study. The respondents were all Malaysian who did not have any chronic diseases and not included the pregnant workers as it has been fulfilled the inclusion criteria in this study. Majority of respondents (85.8%) have no family history disease with related to

cardiovascular disease for instance diabetes, hypertension, stroke and coronary heart disease.

Table 4.1 Distribution of Socio-demographic information of respondents (N=254)

Variables	Number of workers (%)	Mean ± SD/ Median
Age (years)		
20-30 (1)	72 (28.3%)	
31-40 (2)	129 (50.8%)	1.98 ± 0.812/ 2.00
41-50 (3)	39 (15.4%)	
>50 (4)	14 (5.5%)	
Gender		
Male (1)	116 (45.7%)	1.54 ± 0.499/ 2.00
Female (2)	138 (54.3%)	
Marital Status		
Single (1)	48 (18.9%)	
Married (2)	197 (77.6%)	1.85 ± 0.449/ 2.00
Divorced (3)	9 (3.5%)	
Educational Level		
Secondary School (2)	104 (40.9%)	3.59 ± 0.493/ 4.00
College/ University (4)	150 (59.1%)	
Total Monthly Income (RM)		
RM1000-RM1999 (1)	34 (13.4%)	
RM2000-RM2999 (2)	132 (52.0%)	
RM3000-RM3999 (3)	56 (22.0%)	2.41 ±1.032/ 2.00
RM4000-RM4999 (4)	13 (5.1%)	
>RM5000 (5)	19 (7.5%)	
Family History Disease		
Yes	35 (13.8%)	1.85 ± 0.364/ 2.00
No	218 (85.8%)	

4.1.2 Working Characteristics of the Respondents

The respondents working characteristics comprises of working type, type of shift work, department, working experience (years) and working duration (hours/day).

Majority with 248 respondents were working at normal office hours schedule and only six of them followed the shift work. There were two type of shift work were practice by the organization which included day shift and day and night shift.

The daily working duration of the workers were 12 hours per day which included 132 respondents. The mean of working experience among officers in immigration department were I year, but most of them had a range 1 to 10 years working experience in Immigration Department of Malaysia. The description of working characteristics of the respondents have been summarized in Table 4.2 below.

Table 4.2: Descriptive Analysis for Working Characteristics of Respondents (N=254)

Variables	Number of Respondents (%)	Mean ± SD[a] /Median[b]
WorkingType		$1.98 \pm 0.152/ 2^b$
Shift Work (1)	6 (2.4)	
Office Hour (2)	248 (97.6)	
Type of Shift Work		
Day Shift	242 (95.3)	$1.09 \pm 0.425/ 1^b$
Day and Night Shift	12 (4.7)	

© COPYRIGHT UPM

Department		
Human Resources (1)	24 (9.4)	
Administration Service (2)	21 (8.3)	
Administration Service (3)	4 (1.6)	$5.16 \pm 2.039/6^b$
Visa, Passport and Permit (4)	30 (11.8)	
Security and Passport (5)	39 (15.4)	
Foreign Workers (6)	35 (13.8)	
Others (7)	101 (39.6)	
Working Experiences (Years)		
1-10	144 (56.7)	$1.52 \pm 0.652/1^b$
10-20	88 (34.6)	
>20	22 (8.7)	
Working Duration (Hours/ Day)		
Less than 8 hours (1)	7 (2.8)	
8.00 (2)	106 (41.7)	$1.56 \pm 0.611/2^b$
12.00 (3)	132 (52.0)	

4.1.3 Behavior Lifestyle of the Respondents

Healthy lifestyle measured by the personal behavior lifestyle to indicate wether the respondents practice their healthy lifestyle or not. There were majority of the workers in department of immigration were not smoking (63.4%) while only (22.4%) of workers were smoking. Besides, there were (72.3%) of workers perform the physical activities in their daily life. Morever, most of them spend time on physical exercise more than 15 minutes in a day with (67.3%). The average hour taken by the respondents in a week to perform the routine of physical exercise was once in a week with (35.4%). Sufficient time of sleep is important to increase the working productivity among workers. Most of the workers in department of immigration sleeps for 5 to 6 hours daily (68.5%) and their average sleep times (55.9%) was at 9.00pm to 11.00pm. The data distribution of behavior lifestyle of the respondents was stated in Table 4.3.

© COPYRIGHT UPM

Table 4.3: Descriptive Analysis for Behavior Lifestyle of the Respondents (N=254)

Variables	Number of Respondents (%)	Mean ± SD[a] /Median[b]
Smoking Status		
Yes (1)	57 (22.4)	
Ex Smoker (2)	36(14.2)	2.41 ± 0.833/ 300[b]
No (3)	161(63.4)	
Physical Activities		
Yes (1)	183 (72.3)	1.23 ± 0.485/ 1.00[b]
No (2)	63 (24.9)	
Type of Exercise		
Cycling (1)	18 (7.1)	
Running (2)	33 (13.0)	
Farming (3)	2 (0.8)	
Dancing (4)	1 (0.4)	
Badminton (5)	25 (9.8)	
Jogging (6)	29 (11.4)	3.92 ± 3.358/ 2.50[b]
Swimming (7)	4 (1.6)	
Walking (8)	19 (7.5)	
Others (9)	47 (18.5)	
None (0)	76 (29.9)	
Duration of Exercise		
None (0)	61 (24.0)	
<15 minutes (1)	22 (8.7)	1.43 ± 0.854/ 2.00[b]
>15 minutes (2)	171 (67.3)	
Routine of Exercise		
None (0)	31 (12.2)	
Less once in a week (1)	59 (23.2)	
Once in a week (2)	90 (35.4)	1.87 ± 1.073/ 2.00[b]
Average two to three times in a week (3)	61 (24.0)	
Average four times or more in a week (4)	13 (5.1)	
Length of Sleep (Hours/day)		
0-4 hours	19 (7.5)	
5-6 hours	174 (68.5)	2.16 ± 0.571/ 2.00[b]
7-8 hours	58 (22.8)	
more than 9 hours	2 (0.8)	
Average Sleep Time Category		
9pm-11pm (1)	142 (55.9)	1.55 ± 0.702/ 1.00[b]
11.30pm-12.00am (2)	81 (31.9)	
more than 12.00am (3)	30 (11.8)	

© COPYRIGHT UPM

4.1.4 Work Family Conflict of the Respondents

As shown in Table 4.4, on the average, the level of work interference with family time based (WIFt) (M =13.29, SD = 4.30), work interference with family strain based, (WIFs) (M = 14.96 , SD = 4.40), and family interfere with work strain based (FIWs) (M = 12.77, SD = 4.62) (was judged to be relatively high by the respondents. On the other hand, the mean value for family interfere with work time based (FIWt) (M = 11.45, SD =3.75) was found to be moderate. Work Influence Family Time based (WIFt) part the high score (50.4%). For Work Influence Family Strain based (WIFs), majority of the respondents in the low score between 6 to 15 by (58.8%); thus, this showed that the respondents have no WIFs at the workplace. Furthermore, Family Interference Work Time based (FIWt) showed the low score (67.0%) among the respondents.

Table 4.4: Descriptive Analysis for Work Family Conflict of the Respondents (N=254)

Variables	Number of Respondents (%)	Mean ± SD[a] /Median[b]
WIFt		
Low Score (5-12)	126 (49.6%)	
High Score (13-25)	128 (50.4%)	13.29 ± 4.30[a] / 13[b]
WIFs		
Low Score (6-15)	137 (58.8%)	
High Score (16-30)	84 (32.9%)	14.96 ± 4.40[a] / 14[b]
FIWt		
Low Score (5-12)	171 (67.0%)	
High Score (13-24)	82 (23.3%)	11.45 ± 3.75[a] / 11[b]

FIWs		
Low Score (6-15)	194 (76.2%)	12.77 ± 4.62[a] / 12[b]
High Score (16-30)	59 (23.5%)	

Work Influence Family Time based (WIFt), Work Influence Family Strain based (WIFs), Family Influence Work Time based (FIWt), Family Influence Work Strain based (FIWs).

4.2.1 Mean Comparison of Variables in Metabolic Syndrome Risk (Body Mass Index, Blood Pressure and Waist Circumference) of the respondents between Male and Female Workers in Immigration Department.

The mean of body mass index (BMI) reading, systolic and diastolic blood pressure level and waist circumference reading were compared among male and female workers by using independent T-Test. As assessed by SBP and DBP, maximum mean (SD) of males; for SBP it was 130.08 (15.18) and for DBP it was 78.51 (10.33). Among females also, blood pressure was maximum in overweight females when SBP 120.86 (15.92) as well as DBP 75.03 (10.46) were considered. The differences os SBP and SDP among male and female officers were found to be statistically significant (independent t-test p = 0.001 and p = 0.08).

© COPYRIGHT UPM

Table 4.5: Mean Comparison of BMI category, blood pressure category and waist circumference between male and female officers.

Independent t – test

Variables[a]	Mean (SD)		Mean Difference (95%CI)	t-value (df)	p – value
	Male	Female			
Body Mass Index (kg/m^2)	1.93 (0.74)	1.81 (0.81)	0.12 (-0.074, 0.31)	1.22 (252)	0.224
Blood Pressure					
Systolic (mmHg)	130.08 (15.18)	120.86 (15.92)	9.22 (5.35, 13.08)	4.70 (252)	**0.001**
Diastolic (mmHg)	78.51 (10.33)	75.03 (10.46)	3.48 (0.90, 6.06)	2.66 (252)	**0.008**
Waist Circumference (cm)	84.971 (8.88)	81.390 (8.44)	3.58 (1.44, 5.73)	3.29 (252)	0.001

p – value significant at 0.05 level

4.3.1 The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Body Mass Index (BMI) among Officers in Immigration Department.

Table 4.6 shows the details of associations between socio demographic, work characteristics, behavior lifestyle and work family conflict factors with body mass index (BMI), among officers in immigration department. BMI have been divided into three catogory which were normal, overweight and obesity. Normal category was between range $18.5kg/m^2$ to $24.9kg/m^2$. Overweight category was defined into $25kg/m^2$ to $29.9kg/m^2$ while obesity were defined inti more than $30.0kg/m^2$ (World Health Organization, 2019).

© COPYRIGHT UPM

Chi-Square test was used to test the association between socio demographic and metabolic syndrome risk (body mass index (BMI)). Findings indicated that there is a positive association between socio demographic status (department) and body mass index ($p<0.016$). This result suggests that department located in urban area are more likely to report higher percentage of obesity. The result has been summarized in Table 4.6.

Based on the finding of this study, none of the working characteristics was significantly associated with body mass index among officers in immigration department.

The behavior lifetyle, which is the length of sleeps showed the positive association between body mass index (BMI) with ($p = 0.01$). Thus, the results of the study supported by the recent metaanalysis show that short sleep duration (<6 hours) is significantly associated with MetS (Imran et. al, 2015).

Work family conflict factors does not show any association between body mass index (BMI) in this study. The result have been summarized in Table 4.6.

© COPYRIGHT UPM

Table 4.6: The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Body Mass Index (BMI) among Officers in Immigration Department

Variables	BMI Category, n (%)				Total	X^2	p-value
	Normal	Overweight	Obesity	Underweight			
Age							
20-30	33 (45.8%)	30 (41.7%)	8 (11.1%)	1 (1.4%)	72	9.898	0.359
31-40	44 (34.1%)	54 (41.9%)	29 (22.5%)	2 (1.6%)	129		
41-50	11 (28.2%)	15 (38.5%)	13 (33.3%)	0 (0.0%)	39		
>50	5 (35.7%)	6 (42.9%)	3 (21.4%)	0 (0.0%)	14		
Gender							
Male	35 (30.2%)	55 (47.4%)	25 (21.6%)	1 (0.9%)	116	4.558	0.207
Female	58 (42.0%)	50 (36.2%)	28 (20.3%)	2 (1.4%)	138		
Immigration							
Putrajaya	46 (38.7%)	38 (31.9%)	34 (28.6%)	1 (1.6%)	119	20.267	**0.016**
Kuala Lumpur	29 (46.0%)	26 (41.3%)	7 (11.1%)	1 (1.6%)	63		
Shah Alam	15 (24.2%)	37 (59.7%)	9 (14.5%)	1 (1.6%)	62		
KLIA	3 (30.0%)	4 (40.0%)	3 (30.0%)	0 (0.0%)	10		

Marital Status							
Single	18 (37.5%)	23 (47.9%)	6 (12.5%)	1 (2.1%)	48		
Married	69 (35.0%)	79 (40.1%)	47 (23.95%)	2 (1.0%)	197	7.897	0.246
Divorced	6 (66.7%)	3 (33.3%)	0 (0.0%)	0 (0.0%)	9		
Education Level							
Secondary School	37 (35.6%)	42 (40.4%)	23 (22.1%)	2 (1.9%)	104	1.043	0.791
College /University	56 (37.3%)	63 (42.0%)	30 (20.0%)	1 (0.7%)	150		
Monthly Income							
RM1000-RM1999	12 (35.3%)	12 (35.3%)	9 (26.5%)	1 (2.9%)	34		
RM2000-RM2999	56 (42.4%)	53 (40.2%)	21 (15.9%)	2 (1.5%)	132		
RM3000-RM3999	20 (35.7%)	22 (39.3%)	14 (25.0%)	0 (0.0%)	56	13.024	0.367
RM4000-RM4999	2 (15.4%)	8 (61.5%)	3 (23.1%)	0 (0.0%)	13		
>RM50000	3 (15.8%)	10 (52.6%)	6 (31.6%)	0 (0.0%)	19		
Family History							
Disease	8 (22.9%)	19 (54.3%)	8 (22.9%)	0 (0.0%)	35	5.830	0.443
Yes	85 (39.0%)	85 (390%)	45 (20.6%)	3 (1.4%)	218		
No							
Working Types							
Shift Work	1 (16.7%)	5 (83.3%)	0 (0.0%)	0 (0.0%)	6	4.644	0.200
Office hour	92 (37.1%)	100 (40.3%)	53 (20.9%)	3 (1.2%)	248		

© COPYRIGHT UPM

Type of Shift Work						3.579	0.311
Day Shift	91 (37.6%)	97 (40.1%)	51 (21.1%)	3 (1.2%)	242		
Day and Night Shift	2 (16.7%)	8 (66.7%)	2 (16.7%)	0 (0.0%)	12		
Department							
Human Resources	8 (33.3%)	8 (33.3%)	8 (33.3%)	0 (0.0%)	24		
Administration	7 (33.3%)	8 (38.1%)	5 (23.8%)	1 (4.8%)	21		
Service	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	4		
Quality &ISO	11 (36.7%)	14 (46.7%)	5 (16.7%)	0 (0.0%)	30	12.354	0.828
Visa, Passport and	18 (46.2%)	13 (33.3%)	7 (17.9%)	1 (2.6%)	39		
Permit	16 (45.7%)	14 (40.0%)	5 (14.3%)	0 (0.0%)	35		
Security and Passport	31 (30.7%)	47 (46.5%)	22 (21.8%)	1 (1.0%)	101		
Foreign Worker							
Others							
Working Experience (years)							
1-10	62 (43.1%)	55 (38.2%)	25 (17.4%)	2 (1.4%)	144	8.179	0.225
10-20	27 (30.7%)	38 (43.2%)	22 (25.0%)	1 (1.1%)	88		
>20	4 (18.2%)	12 (54.5%)	6 (27.3%)	0 (0.0%)	22		
Working Duration (hours/day)							
<8 hours	2 (28.6%)	2 (28.6%)	3 (42.9%)	0 (0.0%)	7	9.507	0.392
8 hours	41 (38.7%)	36 (34.0%)	28 (26.4%)	1 (0.95%)	106		
12 hours	48 (36.4%)	62 (47.0%)	20 (15.2%)	2 (1.5%)	132		

© COPYRIGHT UPM

Smoking status							
Yes	17 (29.8%)	22 (38.6%)	17 (29.8%)	1 (1.8%)	57		
No	65 (40.4%)	66 (41.0%)	28 (17.4%)	2 (1.2%)	36	5.854	0.440
Ex smoker	11 (30.6%)	17 (47.2%)	8 (22.2%)	0 (0.0%)	161		
Physical Activities							
Yes	65 (35.3%)	78 (42.6%)	38 (20.8%)	2 (1.1%)	183	4.841	0.848
No	25 (39.7%)	24 (38.1%)	13 (20.6%)	1 (1.6%)	63		
Types Of Exercises							
Cycling	3 (16.7%)	9 (50.0%)	6 (33.3%)	0 (0.0%)	18		
Running	13 (39.4%)	17 (51.5%)	3 (9.1%)	0 (0.0%)	33		
Farming	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2		
Dancing	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1		
Badminton	8 (32.0%)	13 (52.0%)	4 (16.0%)	0 (0.0%)	25	28.874	0.471
Jogging	12 (41.4%)	9 (31.0%)	7 (24.1%)	1 (3.4%)	29		
Swimming	2 (50.5%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4		
Walking	2 (10.5%)	10 (52.6%)	7 (36.8%)	0 (0.0%)	19		
Others	21 (44.7%)	17 (36.2%)	8 (17.0%)	1 (2.1%)	47		
None	31 (40.8%)	26 (34.2%)	18 (23.7%)	1 (1.3%)	76		
Duration Of Exercise							
None	23 (37.7%)	24 (39.8%)	14 (23.0%)	0 (0.0%)	61		
<15 Minutes	7 (31.8%)	9 (40.9%)	5 (22.7%)	1 (4.5%)	22	3.316	0.768
>15 Minutes	63 (36.8%)	72 (42.1%)	34 (19.9%)	2 (1.2%)	171		

© COPYRIGHT UPM

Routine Of Exercise							
None	9 (29.0%)	12 (38.7%)	9 (29.0%)	1 (3.2%)	31		
< once a week	21 (35.6%)	28 (47.5%)	10 (16.9$%)	0 (0.0%)	59		
Once a week	37 (41.1%)	35 (38.9%)	17 (18.9%)	1 (1.1%)	90		
Average 2-3 times a week	21 (34.4%)	25 (41.0%)	14 (23.0%)	1 (1.1%)	61	5.648	0.933
Average four times or more in a week	5 (38.5%)	5 (38.5%)	3 (23.1%)	0 (0.0%)	13		
Length of Sleep (Hours/day)							
0-4 hours	5 (26.3%)	10 (52.6%)	4 (21.1%)	0 (0.0%)	19		
5-6 hours	62 (35.6%)	71 (40.8%)	40 (23.0%)	1 (0.6%)	174	50.315	**0.001**
7-8 hours	26 (44.8)	23 (39.7%)	8 (13.8%)	1 (1.7%)	58		
more than 9 hours	0 (0.0%)	1 (50.0%)	0 (0.0%)	1 (50.0%)	2		
Average Sleep Time Category							
9pm-11pm	59 (41.5%)	53 (37.3%)	28 (19.7%)	2 (1.4%)	142		
11.30pm-12.00am	24 (29.6%)	40 (49.4%)	16 (19.8%)	1 (1.2%)	81	8.779	0.458
more than 12.00am	10 (33.3%)	12 (40.05)	8 (26.7%)	0 (0.0%)	30		

© COPYRIGHT UPM

Work Family Conflict Factors							
WIFt							
Low	54 (21.3%)	38 (15.0%)	32 (12.6%)	126 (49.6%)		58.085	0.435
High	39 (15.4%)	67 (26.4%)	21 (8.3%)	128 (50.4%)			
WIFs						50.413	0.874
Low	61 (24.1%)	51 (20.1%)	36 (14.2%)	2 (0.8%)			
High	30 (11.8%)	56 (22.4%)	17 (6.7%)	103 (40.6%)	254		
						45.803	0.779
FIWt	64 (25.2%)	67 (26.4%)	38 (15.0%)	2 (0.8%)			
Low	29 (11.4%)	37 (14.5%)	15 (5.9%)	1 (0.4)		68.908	0.284
High							
FIWs	74 (29.1%)	86 (33.9%)	41 (16.1%)	2 (0.8%)			
Low	18 (7.1%)	27 (10.6%)	11 (4.3%)	1 (0.4%)			
High							

p – value significant at 0.05 level

© COPYRIGHT UPM

4.3.2 The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Blood Pressure among Officers in Immigration Department.

Age was found to have positive and statistically significant association with blood pressure (p=0.025) among officers the correlation between age, respectively. There was statistically significant positive association between blood pressure among officers in immigration department. The prevalence of hypertension is presented in Table 4.7. The prevalence of hypertension was more in males as compared with females. More males were obese as compared with females. The prevalence of hypertension was higher among males as compared with females.

Based on Table 4.7 Types of immigration also show the significant association with blood pressure among officers in immigration (X^2 =16.780, P = 0.010). The study findings shows that marital status was found to be not significantly associated with hypertension among officers.

Among the behavioral lifestyle variables, the types of exercises and length od sleeps showed the association between blood pressure with (p = 0.004) and (p = 0.052) respectively. The result have been summarized in Table 4.7 below.

© COPYRIGHT UPM

Table 4.7: The Association between Socio-demographic, Work characteristics, Behaviour Lifestyle and Work Family Conflict factors with Blood Pressure among Officers in Immigration Department

Variables	Blood Pressure, n (%)			Total	X^2	p-value
	Normal	Pre-Hypertension	Hypertension			
Age						
20-30	69 (95.8%)	3 (4.2%)	0 (0.0%)	72	14.428	**0.025**
31-40	104 (80.6%)	12 (9.3%)	13 (10.1%)	129		
41-50	31 (79.5%)	4 (10.3)	4 (10.3%)	39		
>50	9 (64.3%)	3 (21.4%)	2 (14.3%)	14		
Gender						
Male	92 (79.3%)	12 (10.3%)	12 (10.3%)	116	3.567	0.168
Female	121 (87.7%)	10 (7.2%)	7 (5.1%)	138		
Immigration						
Putrajaya	97 (81.5%)	12 (10.1%)	10 (8.4%)	119	16.780	**0.010**
Kuala Lumpur	57 (90.5%)	3 (4.8%)	3 (4.8%)	63		
Shah Alam	53 (85.5%)	3 (4.8%)	6 (9.7%)	62		
KLIA	6 (60.0%)	4 (40.0%)	0 (0.0%)	10		

© COPYRIGHT UPM

Marital Status						
Single	43 (89.6%)	2 (4.2%)	3 (6.3%)	48		
Married	162 (82.2%)	19 (9.6%)	16 (8.1%)	197	2.557	0.634
Divorced	8 (88.9%)	1 (11.1%)	0 (0.0%)	9		
Education Level						
Secondary School	86 (82.7%)	10 (9.6%)	8 (7.7%)	104	0.224	0.894
College /University	127 (84.7%)	12 (8.0%)	11 (7.3%)	150		
Monthly Income						
RM1000-RM1999	31 (91.2%)	0 (0.0%)	3 (8.8%)	34		
RM2000-RM2999	110 (83.3%)	14 (10.6%)	8 (6.1%)	132		
RM3000-RM3999	48 (85.7%)	5 (8.9%)	3 (5.4%)	56	10.713	0.219
RM4000-RM4999	8 (61.5%)	2 (15.4%)	3 (23.1%)	13		
>RM5000	16 (84.2%)	1 (5.3%)	2 (10.5%)	19		
Family History Disease						
Yes	29 (82.9%)	3 (8.6%)	3 (8.6%)	35	0.259	0.992
No	183 (83.9%)	19 (8.7%)	16 (7.3%)	218		
Working Types						
Shift Work	5 (83.3%)	1 (16.7%)	0 (0.0%)	6	0.915	0.633
Office hour	208 (83.9%)	21 (8.5%)	19 (7.7%)	268		
Type of Shift Work						
Day Shift	202 (83.5%)	21 (8.7%)	19 (7.9%)	242	1.035	0.596
Day and Night Shift	11 (91.7%)	1 (8.3%)	0 (0.0%)	12		

© COPYRIGHT UPM

Department						
Human Resources	21 (87.5%)	2 (8.3%)	1 (4.2%)	24		
Administration	14 (66.7%)	5 (23.8%)	2 (9.5%)	21		
Service	3 (75.0%)	1 (25.0%)	0 (0..0%)	4	15.770	0.202
Quality &ISO						
Visa, Passport and Permit	25 (83.3%)	0 (0.0%)	5 (16.78%)	30		
Security and Passport	33 (84.6%)	3 (7.7%)	3 (7.7%)	39		
Foreign Worker	30 (85.7%)	2 (5.7%)	3 (8.6%)	35		
Others	87 (86.1%)	9 (8.9%)	5 (5.0%)	101		
Working Experience (years)						
1-10	129 (89.6%)	10 (6.9%)	5 (3.5%)	114		
10-20	67 (76.1%)	9 (10.2%)	12 (13.6%)	88	10.297	**0.036**
>20	17 (77.3)	3 (13.6%)	2 (9.1%)	22		
Working Duration (hours/day)						
<8 hours	5 (71.4%)	0 (0.0%)	2 (28.6%)	7	8.567	0.199
8 hours	88 (83.0%)	11 (10.4%)	7 (6.6%)	106		
12 hours	113 (85.6%)	9 (6.9%)	10 (7.6%)	132		
Smoking status						
Yes	47 (82.5%)	7 (12.3%)	3 (5.3%)	57		
No	137 (85.1%)	12 (7.5%)	12 (7.5%)	161	2.236	0.692
Ex smoker	29 (80.6%)	3 (8.3%)	4 (11.1%)	36		

© COPYRIGHT UPM

Physical Activities						
Yes	153 (83.6%)	17 (9.3%)	13 (7.1%)	183	2.069	0.913
No	54 (85.7%)	4 (6.3%)	5 (7.9%)	63		
Types Of Exercises						
Cycling	11 (61.1%)	2 (6.1%)	4 (22.2%)	18		
Running	27 (81.8%)	3 (16.7%)	4 (12.1%)	33		
Farming	0 (0.0%)	1 (50.0%)	1 (50.0%)	2		
Dancing	1 (100.0%)	0 (0.0%)	0 (0.0%)	1		
Badminton	24 (96.0%)	0 (0.0%)	1 (4.0%)	25	37.525	**0.004**
Jogging	27 (93.1%)	1 (3.4%)	1 (3.4%)	29		
Swimming	4 (100.0%)	0 (0.0%)	0 (0.0%)	4		
Walking	12 (63.2%)	5 (26.3%)	2 (10.5%)	19		
Others	42 (89.4%)	5 (10.6%)	0 (0.0%)	47		
None	65 (85.5%)	5 (6.6%)	6 (7.9%)	76		
Duration Of Exercise						
None	51 (83.6%)	5 (8.2%)	5 (8.2%)	61		
<15 Minutes	20 (90.9%)	0 (0.0%)	2 (9.1%)	22	2.556	0.635
>15 Minutes	142 (83.0%)	17 (9.9%)	12 (7.0%)	171		
Routine Of Exercise						
None	27 (87.1%)	2 (6.5%)	2 (6.5%)	31		
< once a week	53 (89.8%)	2 (3.4%)	4 (6.8%)	59		
Once a week	73 (81.1%)	12 (13.3%)	5 (5.6%)	90	10.760	0.216
Average 2-3 times a	47 (77.0%)	6 (9.8%)	8 (13.1%)	61		

© COPYRIGHT UPM

week						
Average four times or more in a week	13 (100.0%)	0 (0.0%)	0 (0.0%)	13		
Length of Sleep (Hours/day)						
0-4 hours	11 (57.9%)	3 (15.8%)	5 (26.3%)	19	15.414	**0.052**
5-6 hours	146 (83.9%)	17 (9.8%)	11 (6.3%)	174		
7-8 hours	53 (91.4%)	2 (3.4%)	3 (5.2%)	58		
more than 9 hours	2 (100.0%)	0 (0.0%)	0 (0.0%)	2		
Average Sleep Time Category						
9pm-11pm	122 (85.9%)	11 (7.7%)	9 (6.3%)	142	2.830	0.830
11.30pm-12.00am	66 (81.5%)	9 (11.1%)	6 (7.4%)	81		
more than 12.00am	24 (80.0%)	2 (6.7%)	4 (13.3%)	30		

p – value significant at 0.05 level

© COPYRIGHT UPM

4.3.3 The Correlation between Work Family Conflict Category and Metabolic Risk among Officers in Immigration

The correlation between work family conflict category and metabolic syndrome risk among male and female workers were analyzed by using Spearman's correlation and have been summarized into Table 4.8.

The total score of work family conflict factors variables Family Inteference Work strain (WIFs) based was significantly correlate with metabolic syndrome risk for blood pressure. Work Interefence Family time (WIFt) based was significantly correlated with metabolic syndrome for blood pressure with (p=0.038).

Table 4.8: The Correlation between Work Family Conflict Category and Metabolic Risk among Officers in Immigration

Variables	BMI Category		Blood Pressure		Waist Circumference	
	r	**p-value**	**r**	**p-value**	**r**	**p-value**
FIWt	0.061	0.337	-0.116	0.066	0.019	0.762
FIWs	0.030	0.962	-0.148	**0.019**	-0.003	0.958
WIFt	0.067	0.286	-0.130*	**0.038**	0.020	0.755
WIFs	0.042	0.511	-0.140	0.100	0.022	0.728

Spearman's Rank Order Correlation

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

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

© COPYRIGHT UPM

CHAPTER 5

DISCUSSION

5.1 Comparison between metabolic syndrome risk between male and female officers in immigration.

The first hypothesis of this study is there was significant difference of mean metabolic syndrome (hypertension, and obesity) between male and female workers in immigration department. The finding indicated that there was a significant difference of blood pressure and waist circumference between male and female workers. Thus, the finding same with the recent studies, lifestyle-related factors such as age, unhealthy diet, and sedentary lifestyle, as well as socioeconomic status and environmental factors such as job type, occupational stress, and working hours have been reported as important causes of the increasing metabolic syndrome prevalence (Huang et. al, 2015; Huang et. al 2017).

© COPYRIGHT UPM

5.2 The association between socio demographic and metabolic syndrome risk among officers in immigration.

The hypothesis of this study was there is association between socio demographic status with metabolic syndrome risk (hypertension and obesity) among immigration officers of different ages that might inform future workplace interventions. The study is unique in that measured a variety of demographic, health-related, and work-related factors as well as two indicators of obesity,BMI and Blood Pressure, across workers in a specific industry (government) and in different age

groups who may have different developmental stressors and needs. From this study, its indicated that there was an a association age between metabolic syndrome risk (hypertension and obesity). The findings support the notion described in the Social Ecological Model that obesity is a multifactorial disease with many contributing factors that may differ across a worker's lifespan.

The majority of the factors that we identified as being associated with increased BMI and Blood Pressure differed by age. The study observed that types of immigration, length of sleeps, working experiences and types of exercises were only associated with differences in BMI and/or Blood Pressure. It is possible that individuals are more susceptible to the effects of certain exposures at different times in their lives.

5.3 The association between work characteristics and metabolic syndrome risk among officers in immigration.

Work-related factors can affect obesity through many pathways from directly impacting energy expenditure via physical work demands to indirectly by influencing leisure time physical activity levels as a result of work scheduling or workplace stress (Pandalai, Schulte & Miller, 2013)

© COPYRIGHT UPM

5.4 The association between behavior lifestyle and metabolic syndrome risk among officers in immigration.

The hypothesis of this study was there is a significant association between behavioral lifestyle with metabolic syndrome risk (hypertension and obesity) among male and female workers. This study show a significant association between smoking and BMI among male workers (p=0.001). Reports on Smoking Status among Malaysian Adults reported that the number of smokers increased to five million (The Ministry of Health's National Health and Morbidity Survey, 2015).

In the other hand, the study showed that both gender male and female actively involved in physical activities. There was a significantly association between physical activities with obesity (p=0.01) because physical activities increases calories burned, increase metabolic rate and help control appetite. This result has answered the evidence lacking in define the role of physical activity in shift work related obesity in previous study (Robin & Harvey, 2010). So, this study partially supports the hypothesis that physical activites, types of exercises, duration of exercises, and routine of exercises associated with metabolic syndrome risk.

© COPYRIGHT UPM

CHAPTER 6

CONCLUSION

In conclusion, the previous study has highlighted the evidence that there was an association between shift work and other risk factor with metabolic syndrome risk. From this, it can indicated that the shift workers that have metabolic syndrome risk were due to their own behavioral lifestyle and other factors in socio demographic, work characteristic, and work family conflict factor. So, this study indicated that the association between shift works and other risk factors with workers in immigration department Malaysia were identified. Finding from this study highlighted that the smoking status, physical activities, type of exercise, duration of exercise, routine of exercise, and average of sleep time was significant associated with metabolic syndrome risk among male and female workers. More work must be done to identify factors or strategies associated with changes in obesity over time. Other than that, both work family conflict factors work intereference family time based (WIFt) and family interference work strain based (FIWs) showed there were an association between work family conflict and metabolic syndrome risk (hypertension) among workers in immigration department.

The strength of this study were the work family factors that included as a variable to assess both the work and family conflict among the respondents on their relation with working environment, peer as well as supervisor. There were several limitation from this study for instance the late approval from the department of immigration for the data collection process, and the imbalance male and female respondents. This was important to get the equal number of respondents for both

© COPYRIGHT UPM

gender as the study need to compare the association between different gender. Another limitation of this study was the sampling method used which the cross sectional design study, it gives the inclusive results. This type of study design could not define the true causal effect or any temporal relationship. Other than that, this study was looking at long term exposure of health problems like hypertension and obesity.

The most important recommendation for future study by researchers are the selection of the respondents must included only healthy and young respondents only as age is the main confounder that can affect the dependent variable of this study. As for employers recommendation, the employers need to take prompt action to reduce the chances of the workers to get metabolic syndrome disease risk among workers in occupational industry. This step was important to ensure the increase of workers productivity and healthy manpower for long term period. This statement can be supported by the section 15 in Occupational Safety and Health Act 1994, that stated It shall the duty of every employer and every self-employed to ensure as far as practicable, the safety, health and welfare at work of all the employees at all time. The preventive action already taken by the organization was it provide the gym, healthy food at cafeterias for the workers. Another recommendation for the workers was to conduct a physical activities that involves all the workers to enhances their awareness about metabolic syndrome risk among themselves.

© COPYRIGHT UPM

REFERENCES

Aminah Ahmad. (2008). Job, Family and Individual Factors as Predictors of Work-Family Conflict. *The Journal of Human Resource and Adult Learning,4(1)*. Retrieved from https://www.google.com/search?q=Job%2C+Family+and+Individual+Factors+as+Predictors+of+WorkFamily+Conflict&oq=Job%2C+Family+and+Individual+Factors+as+Predictors+of+WorkFamily+Conflict&aqs=chrome..69i57j0.7974j0j4&sourceid=chrome&ie=UTF-8#

Allen, T.D., Herst, D.E., Bruck, C. S., Sutton, M. (2000). Consequences associated with work-to-family conflict: a review and agenda for future research. *J Occup Health Psychol. 2000 Apr;5(2):278-308.*

Alberti, K.G., Zimmet, P., Shaw, J. & IDF Epidemiology Task Force Consensus Group. 2005. The metabolic syndrome: A new worldwide definition. Lancet. 366: 1059-1062

Amstad, F.T., Meier, L. L., Fasel, U., Elfering, A., Semmer, N. K. (2011). A meta-analysis of work-family conflict and various outcomes with a special emphasis on cross-domain versus matching-domain relations. *J Occup Health Psychol. 2011 Apr;16(2):151-69. doi: 10.1037/a0022170.*

Amiri; Abdul Majid; Mohd Hairi; Thangiah, N.; Bulgiba; and Su, T.T. (2014). Prevalence anddeterminants of cardiovascular disease risk factors among the

residents of urban community housing projects in Malaysia. *BMC Public Health*201414 (Suppl 3) :S3 Retrieved from https://doi.org/10.1186/1471-2458-14-S3-S3

Ahmad Zainal Abidin Abd Razak, Nek Kamal Yeop YunusÇ, Aizzat Mohd Nasurdin. (2011). The Impact Of Work Overload And Job Involvement On Work-Family Conflict Among Malaysian Doctors. *Labuan e-Journal of Muamalat and Society, Vol. 5, 2011, pp. 1-10*

Azman ismail, Hasan Al- Banna Mohamed, Ahmad Zaidi Sulaiman, Zamri Ismail and Wan Norhafizainee Wan Mahmood. (2010). Relationship between work stress, coworker's social support, work stress and work interference with family conflict: an empirical study in malaysia. *International Business Management 4920:76-83*

Alberti, K.G.M.; Zimmet, P.; Shaw, J. (2005). The metabolic syndrome—A new worldwide definition. Lancet 2005, 366, 1059–1062.

Abdul-Razak, S., Daher, A. M., Ramli, A. S., Ariffin, F., Mazapuspavina, M. Y., Ambigga, K. S., … REDISCOVER Investigators (2016). Prevalence, awareness, treatment, control and socio demographic determinants of hypertension in Malaysian adults. *BMC public health*, *16*, 351. doi:10.1186/s12889-016-3008-y

Beutell, N.J., & Wittig-Berman, U. (2008). Work-family conflict and work-family synergy for generation X, baby boomers and matures: generational differences,

predictors and satisfaction outcomes. *Journal of Managerial Psychology*, 23(5), 507-523.

Boles, J.S., Howard, W.G., & Donofrio, H.H. (2001). An investigation into the interrelationships of WFC, family-work conflict and work satisfaction. *Journal of Managerial Issues*, 13 (3), 376.

Carlson, D., Kacmar, K., & Williams, L. (2000). Construction and initial validation of a multidimensional measure of work/family conflict. *Journal of Vocational Behaviour*, 56, 249-276.

Carlson, D., Kacmar, K.M., Wayne, J.H., & Grzywacz, J.G. (2006). Measuring the positive side of the work-family interface: development and validation of a work-family enrichment scale. *Journal of Vocational Behavior*, 68, 131-164.

Chee H.P., Hazizi Abu Saad, Barakatun Nisak Mohd Yusof, Mohd Nasir Mohd Taib. (2018).Determinants of Metabolic Syndrome among Malaysian Government Employees. *17(1), Apr 2018*

Chee HP, Hazizi AS, Barakatun Nisak MY, Mohd Nasir MT. Metabolic risk factors among government employees in Putrajaya, Malaysia. Sains Malaysiana 2014; 43(8): 1165-74

Cambridge Dictionary. Retrieved from https://dictionary.cambridge.org/dictionary/english/immigration

© COPYRIGHT UPM

Edwards JR, Rothbard NP (2000) Mechanisms linking work and family: clarifying the relationship between work and family constructs. Academy of Management Review 25, 178–99.

Fatimah, O. (2006). Hubungan kerja dan keluarga. In Rohany Nasir & Fatimah Omar (Eds). *Kesejahteraan Manusia : Perspektif Psikologi* (pp.127-136). Bangi: Penerbit UKM

Greenhaus J. H., Beutell N. J. (1985).Sources of conflict between work and family roles. *Acad. Manag. Rev.* 10 76–88.

Greenhaus, J.H., & Powell, G.N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review*, 31(1), 72-92.

Grundy SM, Cleeman JI, Daniels SR, et al. (2005). Diagnosis and management of the metabolic syndrome: an American Heart Association/National Heart, lung, and Blood Institute Scientific Statement. Circulation 2005;112:2735–52.

George C. L, Jiapeng, L., Yuan, L., Xin, S., Wei, X., Khurram Nasir, Wade Schulz, Lixin, X., Krumholz, H. M. (2018). Association of Body Mass Index With Blood Pressure Among 1.7 Million Chinese Adults. JAMA Network Open. 2018;1(4):e181271. doi:10.1001/jamanetworkopen.2018.1271

© COPYRIGHT UPM

Grzywacz, J.G.,& Bass, B.L.(2003). Work, family and mental health: Testing different models of work family fit. *Journal of Marriage and Family*, 65, 248-261.

Gami, A.S., Witt, B.J., Howard, D.E., Erwin, P.J., Gami, L.A., Somers, V.K. & Montori, V.M. 2007. Metabolic syndrome and risk of incident cardiovascular events and death: A systematic review and meta-analysis of longitudinal studies. *J. Am. Coll. Cardiol. 49: 403-414.*

Grundy, S.M. 2007. Metabolic syndrome: A multiplex cardiovascular risk factor. *J. Clin. Endocrinol. Metab. 92: 399-404.*

Huang, J.H.; Li, R.H.; Huang, S.L.; Sia, H.K.; Chen, Y.L.; Tang, F.C. (2015). Lifestyle factors and metabolic syndrome among workers: The role of interactions between smoking and alcohol to nutrition and exercise. *Int. J. Environ. Res. Public Health 2015, 12, 15967–15978.*

Huang, J.H.; Li, R.H.; Huang, S.L.; Sia, H.K.; Lee, S.S.; Wang, W.H.; Tang, F.C. (2017). Relationships between different types of physical activity and metabolic syndrome among Taiwanese workers. Sci. Rep. 7(1)

Immigration Department of Malaysia. Retrieved from https://www.lawyerment.com/guide/gov/Federal_Government/Home_and_Foreign_Affairs/985.htm

© COPYRIGHT UPM

Imran H. Iftikhar, Meredith A. Donley, Jesse Mindel., Adam Pleister., Sheryll Soriano and Ulysses J. Magalang (2015). Sleep Duration and Metabolic Syndrome An Updated Dose–Risk Metaanalysis. *Ann Am Thorac Soc Vol 12, No 9, pp 1364–1372*

International Diabetes Federation. The IDF consensus worldwide definition of the metabolic syndrome. https://www.idf.org/webdata/docs/IDF_Meta_def_final.pdf (accessed 11 May 2019).

Ismail M.N., Chee S.S., Nawawi H., Yussof K., Lim T.O & James W.P. (2002). The International Association for the Study of Obesity. Obesity reviews 3, 203–208

Khadijah, Syaqirah, and Sanaz. (2013). Validation Study of the Malay Version of the Work-Family Conflict Questionnaire. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3952344/

Kelloway EK, Gottlieb HB, Barham L. (1994). The source, nature, and direction of work and family conflict: A longitudinal investigation. *Journal of Occupational Health Psych.1999;4*(4):337. doi: 10.1037/1076-8998.4.4.337.

Kossek, E.E., & Ozeki, C.(1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behavior-human resource research. *Journal of Applied Psychology*, 83(2), 139-149.

Khor, G.L.; Voon, P.C.; Tee, E.S.; Hage, B.H.H.; Wahlqvist, M.L. Cardiovascular

© COPYRIGHT UPM

risk factors among Malaysian urban vegetarians. *J. Community Nutr. 2000, 2, 110–118*

Karatepe O. M., & Tekinkus, M. (2006) The effects of work-family conflict, emotional exhaustion, and intrinsic motivation on job outcomes of front-line employees. *International Journal of Bank Marketing, 24(3), 173 – 193*.

Lambert, E.G., Pasupuleti, S., Cluse, T.T., Jennings, M. and Baker, D. (2006). The impact of work- family conflict on social work and human service worker job satisfaction and organizational commitment: an exploratory study. *Administrative in Social Work*, 30(3), 55-74

Lim, K.G.; Cheah, W.K. (2016). A review of metabolic syndrome research in Malaysia. *Med. J. Malay. 71, 20–28.*

Mohamud, W.N.W.; Ismail, A.A.-S.; Sharifuddin, A.; Ismail, I.S.; Musa, K.I.; Kadir, K.A.; Kamaruddin, N.A.;Yaacob, N.A.; Mustafa, N.; Ali, O.; et al. Prevalence of metabolic syndrome and its risk factors in adult Malaysians: Results of a nationwide survey. Diabetes Res. Clin. Pract. 2011, 91, 239–245.

Ngah N, Ahmad A, Baba M. (2009). The mediating effect of work-family conflict on the relationship between locus of control and job satisfaction. *Journal of Social Science. 2009; 5*(4):348–354. doi: 10.3844/jssp.2009.348.354.

Nurnazirah Jamadin, Samsiah Mohamad, Zurwina Syarkawi, and Fauziah Noordin.

© COPYRIGHT UPM

(2015). Work - Family Conflict and Stress: Evidence from Malaysia. Journal of Economics, Business and Management, Vol. 3, No. 2, February 2015

Prevention CfDCa. Social Ecological Model. 2013. http://www.cdc.gov/obesity/health_equity/addressingtheissue.html.Accessed March 19 2019

Papas MA, Alberg AJ, Ewing R, Helzlsouer KJ, Gary TL, Klassen AC. (2007). The built environment and obesity. *Epidemiol Rev. 2007;29:129–43. doi:10.1093/epirev/mxm009.*

Pandalai, S.P., Schulte, P.A., and Miller, D.B. (2013). Conceptual Heuristic Models Of The Interrelationships Between Obesity And The Occupational Environment. *Scand J Work Environ Health. 2013 May 1; 39(3): 221–232. doi:10.5271/sjweh.3363.*

Panatik, Zainal Badri, Rajab, Abdul Rahman, and Madshah. (2011) .The Impact of Work Family Conflict on Psychological Well-Being among School Teachers in Malaysia. Volume 29, Pages 1500-150

Pandalai SP, Schulte PA, Miller DB. (2013). Conceptual heuristic models of the interrelationships between obesity and the occupational environment. *Scand J Work Environ Health. 2013;39(3):221–32. doi:10.5271/sjweh.3363*

Ramli, A.S.; Daher, A.M.; Noor Khan Nor-Ashikin, M.; Mat-Nasir, N.; Keat Ng, K.;

© COPYRIGHT UPM

Miskan, M.; Ambigga, K.S.; Ariffin, F.; Yasin Mazapuspavina, M.; Abdul-Razak, S.; et al. JIS Definition Identified More Malaysian Adults with Metabolic Syndrome Compared to the NCEP-ATP III and IDF Criteria. Biomed. Res. Int. 2013, 2013

Rampal, L., Rampal, S., Geok, L. K., Azhar Md Zain, Shafie Ooyub, Ramlee Rahmat, Sirajoon Noor Ghani, Krishnan, J., (2007). A National Study on The Prevalence of Obesity Among 16,127 Malaysians. *Asia Pac J Clin Nutr 2007;16* (3):561-566.

Rampal L, Rampal S, Azhar MZ, Rahman AR. Prevalence, awareness, treatment and control of hypertension in Malaysia: A national study of 16,440 subjects. Public Health. 2008;122(1):11–8. doi: 10.1016/j.puhe.2007.05.008.

Suwazono Y, Nogawa K. (2014). Effect of shift work on blood pressure. Nihon Rinsho. *72(8):1497–1502*

Sakuraya A, Watanabe K, Kawakami N, et al. (2017). Work-related psychosocial factors and onset of metabolic syndrome among workers: a systematic review and meta-analysis protocol. *BMJ Open 2017;7:e016716. doi:10.1136/ bmjopen-2017-016716*

Sabitha, M. (2009). *Resolving work family issues among public sector worker: Lesson to be learn from the private sector*. Paper presented at the International Conference on Public-Private Partnership in Development, Kuala Lumpur, 15-

© COPYRIGHT UPM

16 January.

Sabil, Surena and Sabitha. (2011). Work Family Conflict And Work Family Enrichment Among Professional Women: A Malaysian Case

Sanaz, A., Syaqirah, A., & Khadijah, S. (2014). Validation study of the malay version of the work-family conflict questionnaire. *The Malaysian journal of medical sciences : MJMS*, *21*(1), 50–57.

Siti Aisyah Binti Panatik et al. (2011). Procedia - Social and Behavioral Sciences 29,1500 – 1507

Tan BY, Kantilal HK, Singh R. (2008). Prevalence of Metabolic Syndrome among Malaysians using the International Diabetes Federation, National Cholesterol Education Program and Modified World Health Organization Definitions. *Malaysian Journal of Nutrition. 2008;14(1):65–77*

Thomas, L.T., & Ganster, D.C. (1995). Impact of family-supportive work variables on WFC and strain: A control perspective. *Journal of Applied Psychology*, 80, 6-15.

Turi, B.; Codogno, J.; Fernandes, R.; Monteiro, H. Low levels of physical activity and metabolic syndrome: Cross-sectional study in the Brazilian public health system. Cien. Saude Colet. 2016, 21, 1043–1050

© COPYRIGHT UPM

Tan, B.Y., Kumar, K.H. & Rajbans, S. 2008. Prevalence of metabolic syndrome among Malaysians using the International Diabetes Federation, National Cholesterol Education Program and modified World Health Organization definitions. *Mal. J. Nutr. 14(1): 65-77*

Voydanoff, P. (2004). Implication of work and community demands and resources for work-to- family conflict and facilitation. *Journal of Occupational Health and Psychology*, 9(4), 275-285.

Vieira, E.C.; Peixoto, M.R.G.; Silveira, E.A. Prevalence and factors associated with metabolic syndrome in elderly users of the Unified Health System. Rev. Bras. Epidemiol. 2014, 17, 805–817.

World Health Organization. Obesity: Preventing and Managing the Global Epidemic—Report of a WHO Consultation; WHO: Geneva, Switzerland, 2000; Volume 268.

World Health Organization. Hypertension International Society Guidelines for Management of Hypertension. *J. Hypertens. 1999, 17, 151–185.*

Whelton, S.P.; Chin, A.; Xin, X.; He, J. Effect of aerobic exercise on blood pressure: A meta-analysis of randomized, controlled trials. Ann. Intern. Med. 2002, 136, 493–503.

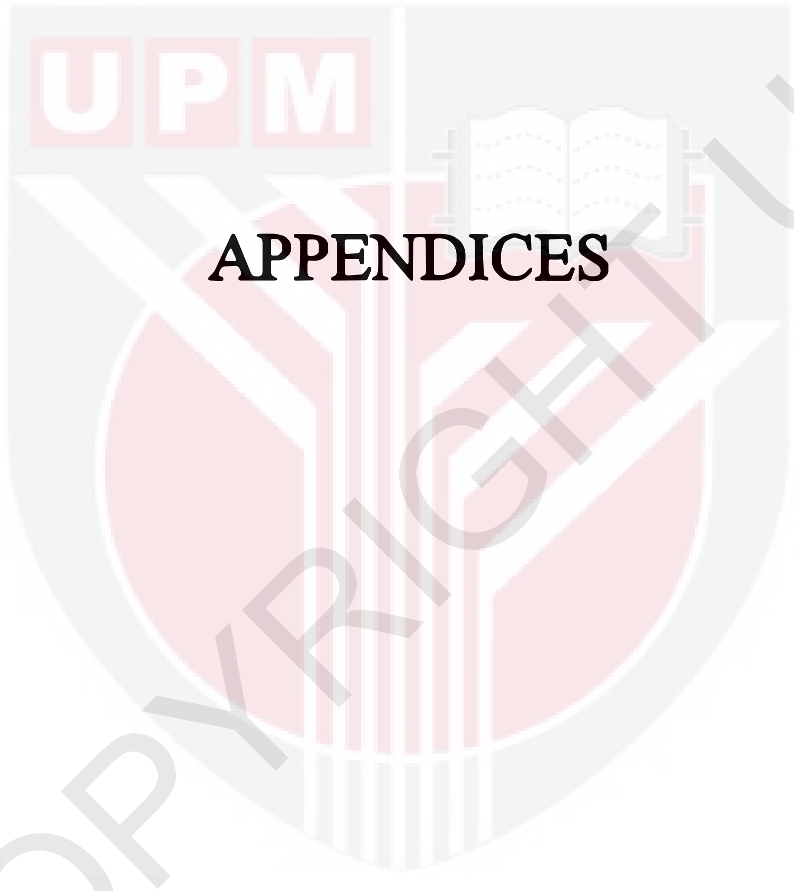
© COPYRIGHT UPM

Mohamud, W. N. W., Ismail, A. A. S., Sharifuddin, A., Ismail, I. S., Musa, K. I., Kadir, K. A., ... Bebakar, W. M. W. (2011). Prevalence of metabolic syndrome and its risk factors in adult Malaysians: Results of a nationwide survey. *Diabetes Research and Clinical Practice*, *91*(2), 239-245. https://doi.org/10.1016/j.diabres.2010.11.025

Yuan K. C., Yit S. C., Appukutty, M., Wan Y. G., Ramanchadran, V. and Yoke M.C., (2018). Prevalence of Metabolic Syndrome and Its Associated Factors among *Vegetarians in Malaysia. Int. J. Environ. Res. Public Health 2018, 15, 2031; doi:10.3390/ijerph15092031*

Zhang Y, Duffy JF. (2017). Do sleep disturbances mediate the association between work-family conflict and depressive symptoms among nurses? A cross-sectional study. *De Castillero ERJ Psychiatr Ment Health Nurs. Oct; 24(8):620-628*

© COPYRIGHT UPM



APPENDICES

© COPYRIGHT UPM

APPENDIX A

Respondent's Information Sheet and Consent

© COPYRIGHT UPM

ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS
(JKEUPM)
UNIVERSITI PUTRA MALAYSIA

Research title	:	**The Association Between Work-Family Conflict and Metabolic Syndrome Among Workers in Immigration Department, Putrajaya**
Study Site	:	**Putrajaya**
JKEUPM Ref No.	:	**JKEUPM-2018-368**
Researcher	:	**Nur Akhmar bt Ibrahim**
Supervisor	:	**Dr. Irniza bt Rasdi**

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 1 dated 29/10/2018
2. Respondent Information Sheet & Consent (Malay), Version 3 dated 7/1/2019
3. Proposal (English), Version 3 dated 7/1/2019
4. Questionnaires/ Interviews (Malay), Version 1 dated 29/10/2018
5. Curriculum Vitae of:
   a. Dr. Irniza bt Rasdi

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.

Decision by JKEUPM:

[X] Approved

[X] **Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research**

[ ] Disapproved

Please note that the approval is **VALID UNTIL 14 JANUARY 2020**

Researchers should comply with the following:

I. Complete a Study Final Report upon study completion (Form 3.2).

II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

III. Applicable for Clinical Trial Studies and Clinical interventional Studies only: Progress Report has to be submitted to JKEUPM at every 6 months from the date of approval (Form 3.1). Report occurrences of all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse

© COPYRIGHT UPM

APPENDIX B

Questionnaire

(Self-Administered and WFC questionnaire)

© COPYRIGHT UPM

Jabatan Kesihatan Persekitaran Dan Pekerjaan

Fakulti Perubatan Dan Sains Kesihatan,

Universiti Putra Malaysia

HUBUNGKAITAN ANTARA KONFLIK KERJA KELUARGA DAN SINDROM METABOLIK DALAM KALANGAN PEGAWAI IMIGRESEN, PUTRAJAYA

Arahan soalan:

1. Borang soal selidik ini terbahagi kepada empat (4) bahagian:

   Bahagian A: Maklumat Sosiodemografi
   Bahagian B: Maklumat Pekerjaan
   Bahagian C: Amalan Gaya Hidup
   Bahagian D: Konflik Kerja Keluarga

2. Anda dikehendaki menjawab semua soalan di dalam buku ini.
3. Untuk menjawab, sila tandakan (/) jawapan anda pada kotak yang telah disediakan.
4. Semua jawapan akan menjadi sulit dan rahsia, hanya untuk tujuan kajian.
5. Borang soal selidik perlu dikembalikan kepada penyelidik setelah selesai menjawab soalan.

ID Responden: ________________ Jabatan/Unit: ________________

No. Telefon: ________________

© COPYRIGHT UPM

BAHAGIAN A: Maklumat Sosiodemografi

1. Nyatakan umur anda.

   ___________ Tahun

2. Nyatakan jantina anda.

   ☐ Lelaki ☐ Perempuan

3. Apakah status pekahwinan anda?

   ☐ Bujang ☐ Berkahwin ☐ Bercerai

4. Apakah tahap pendidikan tertinggi anda?

   ☐ Tiada pendidikan asas ☐ Tidak tamat persekolahan

   ☐ Sekolah Rendah ☐ Sekolah Menengah

   ☐ Lulusan Kolej/ Univesiti

5. Nyatakan jumlah pendapatan dalam masa sebulan?

   RM ______________

6. Apakah status kewarganegaraan anda?

   ☐ Malaysia ☐ Lain-lain: ______________

7. Adakah ahli keluarga mempunyai sebarang penyakit kronik?

   ☐ Ya. Sila nyatakan: ________________ ☐ Tidak

© COPYRIGHT UPM

8. Adakah anda mempunyai sebarang penyakit kronik?

☐ Ya. Sila nyatakan: ________ ☐ Tidak

BAHAGIAN B: Maklumat Pekerjaan

9. Jenis Pekerjaan

☐ Kerja Syif ☐ Waktu kerja biasa (Waktu Pejabat)

10. Jika jenis pekerjaan adalah kerja syif, nyatakan waktu syif semasa anda?

☐ Syif siang ☐ Syif malam ☐ Syif siang dan syif malam

11. Sila nyatakan bahagian/unit anda berkhidmat di organisasi ini;

☐ Bahagian Pengurusan Sumber Manusia
☐ Bahagian Keselamatan dan Paspot
☐ Bahagian Khidmat Pengurusan
☐ Bahagian Visa, Passport dan Permit
☐ Bahagian Perkhidmatan Pentadbiran
☐ Bahagian Pekerja Asing
☐ Lain-lain, nyatakan: ________

12. Berapa lama tempoh anda bekeja untuk jawatan semasa anda sekarang?

________ Tahun

© COPYRIGHT UPM

13. Berapa jam dalam sehari anda berada di ruang kerja sekarang?

☐ 0-2 jam ☐ 2-4 jam ☐ 4-6 jam ☐ lebih 6 jam

BAHAGIAN C: Amalan Gaya Hidup Sihat

i. Penggunaan Tembakau

14. Adakah anda seorang perokok?

☐ Perokok ☐ Bekas Perokok ☐ Tidak pernah merokok

ii. Aktiviti Fizikal

15. Pada bulan-bulan yang lepas, apakah anda melibatkan diri dalam apa-apa aktiviti fizikal atau senaman selain anda melakukan pekerjaan harian?

☐ Ya ☐ Tidak

16. Jika jawapan anda YA di soalan 15, sila nyatakan aktiviti fizikal tersebut.
(contoh: Berbasikal, berlari, berkebun, menari, bermain badminton, dan berjalan untuk bersenam)

____

17. Berapa lama masa yang diambil untuk anda melakukan aktiviti fizikal di atas?

☐ Kurang daripada 15 minit ☐ Lebih daripada 15 minit

© COPYRIGHT UPM

18. Nyatakan kekerapan rutin aktiviti fizikal anda?

- [ ] Kurang daripada sekali dalam seminggu
- [ ] Sekali dalam seminggu
- [ ] Purata dalam 2-3 kali dalam seminggu
- [ ] Purata dalam empat kali atau lebih dalam seminggu

iii. Kualiti Tidur

19. Berapa purata jam anda tidur dalam masa sehari?

- [ ] 0-4 jam
- [ ] 5-6 jam
- [ ] 7-8 jam
- [ ] >9 jam

20. Nyatakan waktu tidur kebiasaan anda? (Contoh: Pukul 10 pm)

____

© COPYRIGHT UPM

BAHAGIAN D: Konflik Kerja Keluarga

Sepanjang 2 minggu yang lalu, berapa kerap anda berada diganggu oleh mana-mana masalah berikut? Sila tandakan (✓) pada jawapan pilihan anda.

a) Konflik kerja keluarga

	Sangat tidak setuju	Tidak setuju	Tidak pasti	Setuju	Sangat setuju
1) Saya terpaksa menukar rancangan bersama ahli keluarga kerana keperluan pekerjaan saya.					
2) Keperluan pekerjaan menghalang saya daripada meluangkan masa yang saya ingini dengan keluarga saya.					
3) Tanggungjawab kerja menyukarkan saya untuk melakukan kerja rumah.					
4) Untuk memenuhi keperluan pekerjaan, saya terpaksa menghadkan bilangan perkara yang boleh dilakukan bersama ahli keluarga.					
5) Pekerjaan saya menghalang saya daripada menghadiri temujanji dan majlis khas untuk ahli keluarga.					
6) Selepas waktu kerja, saya kurang bertenaga untuk tugas yang saya perlu lakukan di rumah.					
7) Saya fikirkan tentang kerja semasa saya berada di rumah.					
8) Saya tidak dengar apa yang dikatakan oleh orang di rumah kerana saya berfikir tentang kerja.					
9) Selepas kerja, saya perlu bersendirian buat sementara waktu akan menjadi tidak produktif di tempat kerja.					
10) Kerja saya membuatkan saya mempunyai perasaan kurang senang semasa di rumah.					
11) Keperluan kerja membuatkan saya sukar menikmati masa yang diluangkan bersama ahli keluarga.					
12) Saya akan meluangkan masa lebih panjang untuk bekerja jika saya mempunyai kurang keperluan keluarga.					

© UPM

13) Keperluan keluarga mengganggu waktu kerja saya.					
14) Keperluan keluarga menyukarkan saya untuk memikul lebih tanggungjawab kerja.					
15) Saya mengambil masa kerja untuk menguruskan ahli keluarga.					
16) Keperluan keluarga menyukarkan saya untuk mempunyai jadual kerja yang saya kehendaki.					
17) Semasa saya bekerja, saya diganggu oleh keperluan keluarga.					
18) Perkara yang berlaku dalam kehidupan keluarga saya membuatkan saya sukar untuk menumpukan perhatian di tempat kerja.					
19) Kejadian di rumah membuat saya tertekan dan cepat marah di tempat kerja.					
20) Kerana keperluan yang saya hadapi di rumah, saya berasa letih di tempat kerja.					
21) Saya meluangkan masa di tempat kerja memikirkan tentang tugas yang saya perlu lakukan di rumah.					
22) Kehidupan keluarga saya membuatkan saya berperasaan kurang senang di tempat kerja.					

TAMAT

TERIMA KASIH ATAS KERJASAMA ANDA

© COPYRIGHT UPM

APPENDIX C

Ethical Committee Approval UPM

© COPYRIGHT UPM

JAWATANKUASA ETIKA UNIVERSITI UNTUK PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM) UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,

BORANG 2.4: PENERANGAN DAN PERSETUJUAN RESPONDEN

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

1. TAJUK KAJIAN

Hubungkait antara Konflik Kerja Keluarga dan Risiko Sindrom Metabolik dalam kalangan Pegawai Imigresen di Putrajaya.

2. PENGENALAN

Kajian ini mengenal pasti hubungkaitan antara konflik kerja dan sindrom metabolik di kalangan imigresen pekerja dan perbezaan mereka berdasarkan faktor sosio-demografi seperti umur, jantina, status perkahwinan dan jabatan. Anda dialu-alukan untuk menyertai kajian ini. Penglibatan responden adalah secara sukarela. Kajian ini dijalankan bagi memberi tumpuan kepada konflik kerja termasuk faktor-faktor gaya hidup, psikososial dan sociodemografik yang memberi hubungkait kepada risiko sindrom metabolik yang terdiri daripada tekanan darah tinggi (hipertensi), dan obesiti dalam kalangan pegawai Imigresen. Penemuan kajian ini boleh digunakan untuk meningkatkan kesedaran mengenai sindrom metabolik di kalangan pegawai imigresen di bidang kerajaan terutama mereka yang mempunyai konflik kerja keluarga.

3. APAKAH YANG PERLU ANDA LAKUKAN?

Borang soal selidik disediakan oleh penyelidik kepada responden untuk mendapatkan maklumat berkaitan dalam kajian ini. Terdapat pengukuran fizikal seperti berat badan dan ketinggian responden, hal ini untuk mendapatkan bacaan Index Jisim Jasad. Bagi menentukan risiko sindrom metabolik seperti tekanan darah tinggi (hipertensi) dan obesiti. Kemudian, bacaan tekanan darah dibandingkan dengan standard bacaan individu normal.

© COPYRIGHT UPM

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?

Pekerja yang hamil dan berpenyakit kronik (diabetes, sakit jantung) tidak digalakkan untuk menjadi responden bagi kajian ini.

5. APAKAH FAEDAH MENYERTAI KAJIAN INI?

a) KEPADA ANDA SEBAGAI PESERTA?

Hasil daripada kajian ini akan menentukan sama ada responden mempunyai risiko sindrom metabolik. Sindrom metabolik menyumbang kepada rekod tertinggi kadar kematian penyakit tidak berjangkit di Malaysia. Justeru itu, maklumat yang bakal diperolehi akan dimaklumkan kepada jabatan sumber manusia dalam organisasi anda supaya mereka boleh mengambil langkah kawalan untuk memastikan kesemua pekerja berada dalam keadaan yang sihat dan memastikan tahap kesedaran berkenaan sindrom metabolik meningkat dalam kalangan semua warga kerja.

b) KEPADA PENYELIDIK?

Bagi membantu penyelidik memutuskan hubungkait antara konflik kerja, dan risiko sindrom metabolik di kalangan pegawai Imigresen. Seterusnya, maklumat yang diperolehi daripada kajian ini akan digunakan sebagai rujukan kepada mereka yang berminat untuk membuat kajian lanjutan yang berkaitan dengan tajuk kajian ini di bawah bidang kesihatan pekerjaan.

6. ADAKAH IA BERISIKO?

Terdapat risiko dalam kajian ini kerana melibatkan prosedur pengukuran tekanan darah. Responden terdedah kepada risiko kecederaan fizikal. Langkah yang diambil untuk mengelakkan kecederaan kepada responden semasa mengambil sampel darah ialah dengan mematuhi prosedur Pengendalian LANGKAH Pengawasan WHO Bahagian 3: Latihan dan Panduan Praktis, Panduan Pengukuran Fizikal (Langkah Pengawasan WHO, 2008). Penekanan alat tekanan darah mungkin memberi rasa tidak selesa pada lengan responden, namun keadaan tersebut hanya dirasakan untuk beberapa saat sahaja.

© COPYRIGHT UPM

7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Ya. Segala maklumat responden yang diperolehi dalam kajian ini akan menjadi sumber rujukan melalui soalan-soalan di dalam soal selidik serta pengukuran ketinggian, berat badan dan tekanan darah. Semua maklumat ini akan kekal sulit dan data tidak akan didedahkan. Ini adalah untuk tujuan penyelidikan semata-mata.

8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

Jika terdapat sebarang persoalan atau masalah anda boleh berhubung dengan Dr Irniza binti Rasdi, beliau merupakan Penyelia penyelidikan kajian di talian 03-89472643/ 012-3153360 dan melalui emel irniza@upm.edu.my atau menghubungi Nur Akhmar binti Ibrahim, sebagai penyelidik di talian 011-23613998 dan menerusi emel nurakhmar96@gmail.com. Ibu Pejabat Jabatan Imigresen Malaysia , (Kementerian Dalam Negeri) No. 15, Tingkat 1-7, (Podium) Persiaran Perdana, Presint 2, 62550 Putrajaya boleh dihubungi menerusi talian 03-8000 8000 atau emel ke webmaster@imi.gov.my.

© COPYRIGHT UPM

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini ________

9. PERSETUJUAN

Saya.. No Kad Pengenalan. .... beralamat...

..............................dengan ini bersetuju untuk mengambil bahagian secara sukarela dalam penyelidikan yang tersebut di atas *(kajian klinikal/percubaan ubat-ubatan/rakaman video/kumpulan sasaran/temuduga/ soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan Responden). Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini pada bila-bila masa tanpa memberi sebarang alasan.Saya juga memahami bahawa sebarang maklumat yang berkaitan identiti saya akan dirahsiakan.

Saya* berminat / tidak berminat untuk mengetahui keputusan kajian yang melibatkan saya.

I setuju/tidak bersetuju untuk imei/gambar/rakaman video/ rakaman suara digunakan dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

*potong yang tidak berkenaan

Tandatangan .... (*Responden*)

Tarikh :...

Tandatangan .... (*Saksi*)

Nama :..

No. K/P: ....

Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan tujuan penyelidikan yang tersebut di atas.

Tarikh ....

Tandatangan .... (*Penyelidik*)

© COPYRIGHT UPM

APPENDIX D

Approval from Immigration Department of Malaysia

(Ministry of Home Affairs)

© COPYRIGHT UPM

JABATAN IMIGRESEN MALAYSIA
(KEMENTERIAN DALAM NEGERI)
NO. 15, TINGKAT 1-7 (PODIUM)
PERSIARAN PERDANA, PRESINT 2,
62550 PUTRAJAYA
WILAYAH PERSEKUTUAN

Telefon : 603-8000 8000
Faks : 603-8880 1200
Portal Rasmi : www.imi.gov.my

"KEDAULATAN DAN KESELAMATAN NEGARA TANGGUNGJAWAB BERSAMA"

Ruj. Tuan :

Ruj. Kami : IM.101/HQ-C/596/2

Tarikh : 7 Jamadil Akhir 1439H
14 Februari 2019M

SENARAI EDARAN SEPERTI DI LAMPIRAN

YBhg. Dato'/Tuan/Puan,

KEBENARAN MENJALANKAN PENYELIDIKAN BAGI KURSUS EOH49999A&B (PROJEK ILMIAH TAHUN AKHIR) UNIVERSITI PUTRA MALAYSIA

Dengan segala hormatnya saya diarah merujuk kepada perkara di atas.

2. Sukacita dimaklumkan pelajar Tahun Empat (4) Program Ijazah Sarjana Muda Sains (Kesihatan Persekitaran Dan Pekerjaan), Fakulti Perubatan Dan Sains Kesihatan, UPM akan menjalankan penyelidikan bagi memenuhi syarat pengajian dan keperluan projek ilmiah mereka di Jabatan Imigresen Malaysia. Justeru, pihak BPSM telah mengadakan pertemuan awal bersama pelajar-pelajar ini pada 25 Januari 2019, untuk melihat skop kajian dan bentuk soal selidik yang bakal dijalankan. Kajian ini akan dilaksanakan bermula pada **18 Februari 2019 hingga 29 Mac 2019.**

© COPYRIGHT UPM

SENARAI EDARAN DALAMAN

Pengarah Bahagian Khidmat Pengurusan

Pengarah Bahagian Visa, Pas dan Permit

Pengarah Bahagian Keselamatan dan Pasport

Pengarah Bahagian Pekerja Asing

Pengarah Bahagian Pengurusan Kualiti dan ISO

SENARAI EDARAN LUARAN

Pengarah
Jabatan Imigresen Lapangan Terbang Antarabangsa
Kuala Lumpur (KLIA),
Tingkat Bawah,
Bangunan Airport Management Centre (AMC),
64000 Sepang
KUALA LUMPUR

Pengarah
Jabatan Imigresen Wilayah Persekutuan Kuala Lumpur,
Aras LG, 1,2 & 5, Kompleks Kementerian Dalam Negeri (KDN),
No 69, Jalan Sri Hartamas 1, Off Jalan Duta,
50550 Kuala Lumpur,
KUALA LUMPUR

Pengarah
Jabatan Imigresen Malaysia Negeri Selangor,
Tingkat 2, Kompleks PKNS,
40550 Shah Alam,
SELANGOR DARUL EHSAN

COPYRIGHT UPM