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*College of Public Health Sciences*

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An association between job stress, social support and insomnia  
among public health workers in Thailand.



A Thesis Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Public Health in Public Health  
Common Course  
College of Public Health Sciences  
Chulalongkorn University  
Academic Year 2018  
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ศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน การสนับสนุนทางสังคม และภาวะนอนไม่หลับ  
ในผู้ปฏิบัติงานสาธารณสุข ในประเทศไทย



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต  
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ปีการศึกษา 2561  
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	An association between job stress, social support and insomnia among public health workers in Thailand.
By	Miss Kanokrat Paitool
Field of Study	Public Health
Thesis Advisor	Assistant Professor NUTTA TANEEPANICHSKUL, Ph.D.

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Accepted by the College of Public Health Sciences, Chulalongkorn University in Partial Fulfillment of the Requirement for the Master of Public Health

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จุฬาลงกรณ์มหาวิทยาลัย  
CHULALONGKORN UNIVERSITY

กนกรัตน์ ไพฑูลย์ : ศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน การสนับสนุนทางสังคม และภาวะนอนไม่หลับใน  
ผู้ปฏิบัติงานสาธารณสุข ในประเทศไทย. ( An association between job stress, social support  
and insomnia among public health workers in Thailand.) อ.ที่ปรึกษาหลัก : ญัตติ ฐานิพานิช  
สกุล

ปัจจุบันนี้ความผิดปกติของการนอนหลับจัดเป็นปัญหาทางด้านสาธารณสุขระดับโลก ซึ่งสามารถส่งผลกระทบต่อ  
สุขภาพของประชาชนได้ในหลายด้าน เช่น ปัญหาด้านสุขภาพจิต โรคหัวใจและหลอดเลือด อีกทั้งการเกิดอุบัติเหตุที่ไม่ได้ตั้งใจ ฯลฯ โรค  
นอนไม่หลับ(Insomnia) จัดเป็นหนึ่งในความผิดปกติของการนอนหลับ ซึ่งมีอาการของ 1)การนอนไม่หลับหรือหลับยาก 2)การนอน  
หลับไม่สนิท ตื่นขึ้นมากกลางดึกหรือหลับๆตื่นๆ หรือทั้งสองอย่าง การระบุภาวะของโรคนอนไม่หลับ(Insomnia) ก่อนข้างเป็นไปได้อ  
ยาก อย่างไรก็ตามการประเมินตนเองย้อนหลังได้ถูกนำมาใช้ในการระบุความรุนแรงของโรคนอนไม่หลับ บุคลากรด้านสาธารณสุข ถือ  
เป็นหนึ่งในอาชีพที่มีบทบาทในการจัดการกับการกระจายตัวและปัจจัยการเกิดโรคและภัยสุขภาพของประชากรในพื้นที่ โดยรูปแบบการ  
ดำเนินงานข้างต้นต้องอาศัยความร่วมมือจากหลายภาคส่วน และต้องทำงานภายใต้ความกดดันที่ค่อนข้างสูง ซึ่งประกอบด้วย ภาระงานที่  
ได้รับมอบหมาย ชั่วโมงในการทำงาน ความขัดแย้งระหว่างความเชื่อและทัศนคติ รวมถึงความตระหนักของประชาชน ขาดการสนับสนุนที่  
เพียงพอจากหน่วยงานต้นสังกัด หรือแม้กระทั่ง ความเสี่ยงต่อการติดเชื้อและปัญหาทางด้านสุขภาพอื่นๆ การศึกษาในครั้งนี้เป็นการศึกษา  
ภาคตัดขวางที่มีจุดมุ่งหมายเพื่อ 1)เข้าถึงความชุกของโรคนอนไม่หลับ(insomnia) และ 2)ศึกษาความสัมพันธ์ระหว่างความเครียดจาก  
การทำงาน การสนับสนุนทางสังคม และโรคนอนไม่หลับ(insomnia) ในบุคลากรสาธารณสุขของประเทศไทย โดยใช้การสุ่มตัวอย่าง  
แบบโควตาในการเลือกผู้ตอบแบบสอบถาม ซึ่งแบบสอบถามในครั้งนี้ประกอบด้วย แบบสอบถามความเครียดจากการทำงานฉบับภาษาไทย  
(Thai-JQC) และแบบสอบถามดัชนีความรุนแรงของการนอนไม่หลับ(ISI) ซึ่งมีอัตราการตอบกลับมาทั้งสิ้น ร้อยละ 90.60 และ  
ถูกนำมาวิเคราะห์เชิงพรรณนา ไคสแควร์ (Chi-square) และการวิเคราะห์โลจิสติกแบบทวิ(binary logistic regression)  
โดยผลการศึกษาพบว่า ด้านปัจจัยส่วนบุคคล ร้อยละ 80.00 ของกลุ่มตัวอย่างในครั้งนี้ส่วนใหญ่เป็นเพศหญิง โดยมีอายุเฉลี่ยอยู่ที่ 35 ปี  
ส่วนใหญ่ร้อยละ 67.69 สำเร็จการศึกษาระดับปริญญาตรีหรือเทียบเท่าระยะเวลาในการปฏิบัติงานเฉลี่ยอยู่ที่ 46 ชั่วโมงต่อสัปดาห์ เกือบ  
ครึ่งมีเงินเพียงพอแต่ไม่เหลือเก็บในแต่ละเดือน(40%) ทั้งนี้พบว่า มากกว่าครึ่งของกลุ่มตัวอย่างในครั้งนี้ มีภาวะโรคนอนไม่หลับ  
(52.6%) สำหรับปัจจัยด้านความเครียดจากงานและแรงสนับสนุนทางสังคม พบว่าร้อยละกลุ่มตัวอย่างที่มีภาวะโรคนอนไม่หลับ ร้อยละ  
27.49 มีระดับความเครียดจากการทำงานสูง และร้อยละ 43.27 มีระดับแรงสนับสนุนทางสังคมต่ำ นอกจากนี้ยังพบว่า โรคนอนไม่  
หลับ(insomnia) มีความสัมพันธ์กับ ระดับการศึกษา(P-value=0.03), ความเพียงพอของรายได้ (P-value<0.01), ระดับ  
ความต้องการงานทางจิตวิทยา(P-value<0.01), และระดับการสนับสนุนจากผู้บังคับบัญชา(P-value=0.04) และเมื่อนำตัว  
แปรมาวิเคราะห์binary logistic regression พบว่า บุคลากรสาธารณสุขที่มีระดับความต้องการงานทางจิตวิทยาสูง มีโอกาสใน  
การพบโรคนอนไม่หลับมากขึ้น 1.99 เท่า เมื่อเทียบกับกลุ่มที่มีระดับความต้องการงานทางจิตวิทยาต่ำ (OR = 1.99; 95%CI  
1.24 – 3.00) ในขณะที่บุคลากรสาธารณสุขที่มีระดับการสนับสนุนจากผู้บังคับบัญชาสูง มีสามารถลดโอกาสในการเกิดโรค  
นอนไม่หลับได้ 0.64 เท่า เมื่อเทียบกับกลุ่มที่มีระดับการสนับสนุนจากผู้บังคับบัญชาต่ำ (OR = 0.64; 95%CI 0.41 – 0.99)

สาขาวิชา            สาธารณสุขศาสตร์  
ปีการศึกษา        2561

ลายมือชื่อนิสิต .....  
ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

# # 6178801053 : MAJOR PUBLIC HEALTH

**KEYWORD:** Insomnia job, public health worker, job control, supervisor support, co-worker support, social support, psychological job demand

Kanokrat Paitool : An association between job stress, social support and insomnia among public health workers in Thailand.. Advisor: Asst. Prof. NUTTA TANEERANICHSKUL, Ph.D.

Sleep disorder is the global burden public health problem nowadays. Sleep disorders link to several health problem including mental health, cardiovascular diseases, and unintentional injury. Insomnia is a type of sleep disorders which have sign of cannot sleep or difficult to fall asleep, stay asleep or woke up at night, or both them. The insomnia rather difficultly to define, however an individual's report is used to identify its severity. Public health workers is an occupation dealing with distribution and determinants of health-related among population. Those people work with the high pressure including workload, working hours, conflict between different beliefs, lack of concern from community, organize support, and infectious which leading mental health risk factors. This analytical cross-sectional study aimed to 1) access prevalence of insomnia and 2) study an association between job stress, social support and insomnia among public health workers in Thailand. The quota sampling technique was used to select participants among doctors, nurse, public health scholar and others whom work under the Ministry of Public Health, Thailand. A self-reported questionnaire was sent out via mail. Thai Job Content Questionnaire (Thai-JCQ) was applied to identify work related factors. Insomnia Severity Index questionnaire (ISI) was performed to classify insomnia level. Amount 325 participants were returned, the response rate was 90.6%. Binary logistic regression was performed to analyse the associations. The result found that, majority of respondents were female (80%). Average age was 35 years old and 67.69% graduated Bachelor's degree. Average reported working time per week was 46 hours/week. 40% of them reported having enough monthly income without saving. More than half (52.6%) of respondents reported clinical insomnia. For job stress and social support, the results among clinical insomnia showed that 27.49 % had high level of job stress, while 43.27% reported low level of social support. Insomnia was associated with education level ( $P$ -value=0.03) and sufficiency of income ( $P$ -value<0.01). Job psychological demand level and supervisor support level were associated with insomnia at  $p$ -value< 0.001 and  $p$ -value=0.04. In multivariate analysis, workers who reports high psychological job demand level was increased 1.99-fold odds of having insomnia comparing to the one who reported low psychological job demand level [OR = 1.99; 95%CI 1.24 – 3.00]. In addition, those who reported high supervisor support level was decreased 0.64-fold odds of having insomnia comparing to the one who reported low supervisor support level [OR = 0.64; 95%CI 0.41 – 0.99].

Field of Study: Public Health  
Academic Year: 2018

Student's Signature .....  
Advisor's Signature .....

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# TABLE OF CONTENTS

	<b>Page</b>
ABSTRACT (THAI) .....	iii
ABSTRACT (ENGLISH) .....	iv
ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS .....	vi
List of Table .....	ix
LIST OF FIGURES .....	x
Chapter 1: Introduction .....	1
1.1 Background & Rationale .....	1
1.2 Research Question .....	4
1.3 Research Objective .....	5
1.4 Research Hypothesis .....	5
1.5 Conceptual framework .....	6
1.6 Operational Definitions .....	7
Chapter 2: Literature Review .....	11
2.1 Insomnia .....	12
2.1.1 Definition of Insomnia .....	12
2.1.2 Evidence of Insomnia .....	13
2.1.3 Health-related of insomnia .....	14
2.1.4 Insomnia among Public health worker .....	15
2.1.5 Measurements of Insomnia .....	17
2.2 Socio-demographic Factors .....	17
2.3 Working Characteristics .....	19
2.4 Job stress .....	21
2.4.1 Definitions and effect of job Stress .....	21
2.4.2 Concept of the theory of job stress .....	21



2.4.3 Tools to measure job stress .....	23
2.5 Social Support.....	23
2.5.1 Definition of Social support .....	24
2.5.2 Concept of the theory of Social support.....	25
2.5.3 Tools to measure social support .....	26
2.6 Related study .....	27
Chapter 3: Research Methodology.....	31
3.1 Research Design .....	31
3.2 Study Area .....	31
3.3 Study Population.....	31
3.3.1 Inclusion criteria.....	31
3.3.2 Exclusion criteria.....	31
3.4 Sample & Sample size .....	32
3.5 Sampling Technique .....	33
3.6 Measurement Tools .....	36
Part 1: General and working information questionnaire .....	36
Part 2: Job stress questionnaire .....	36
Part 3: Social Support questionnaire .....	38
Part 4: Questionnaire Insomnia Severity Index.....	39
3.7 Reliability and Validity study of the instruments.....	40
3.8 Data Collection .....	42
3.9 Analysis (Statistics) .....	43
3.10 Ethical Consideration.....	43
3.11 Limitation .....	44
3.12 Expected Benefit & Application.....	45
3.13 Obstacles and strategies to solve the problem .....	45
Chapter 4: Research Results .....	46
4.1 Socio-demographic factors in the study population among public health workers in Thailand.....	47

4.2 Working characteristics in study population among public health workers in Thailand.....	50
4.3 Job stress, Social support level in study population among public health workers in Thailand.....	53
4.4 Prevalence of Insomnia in study population among public health workers in Thailand.....	56
4.5 The association between factors related and Insomnia among public health workers in Thailand.....	57
4.6 Binary logistic regression factors related and Insomnia among public health workers in Thailand.....	64
Chapter 5: Discussion, Limitation, Conclusion, and Recommendation .....	70
5.1 Discussion.....	70
Part1: Socio-demographic Factors .....	70
Part2: Work characteristics .....	72
Part3: Job stress.....	73
Part4: Social support .....	74
5.2 Conclusion .....	76
5.3 Limitation .....	77
5.4 Recommendation .....	78
REFERENCES .....	79
APPENDIXES .....	84
APPENDIX A : Certificate of Approval-Thai .....	85
APPENDIX B : Certificate of Approval-English.....	86
APPENDIX C : Participants Information Sheet.....	87
APPENDIX D : Informed Consent Form.....	91
APPENDIX E : Questionnaires .....	92
APPENDIX F : Administration & Time schedule .....	99
APPENDIX I : Budget.....	100
APPENDIX J : Results Table .....	101
VITA .....	105

## List of Table

	Page
Table 1 Number of Sociodemographic factors in the study population among public health workers in Thailand.....	47
Table 2 Number of Working characteristics in the study population among public health workers in Thailand.....	50
Table 3 Number of Job stress, Social support level in study population among public health workers in Thailand.....	54
Table 4 Number of Insomnia level in study population among public health workers in Thailand. ....	56
Table 5 Association between Socio-demographics, Working characteristics, and Insomnia among public health workers in Thailand.....	58
Table 6 Association between Job stress, Social support, and Insomnia among public health workers in Thailand.....	62
Table 7 Binary logistic regression factors related and Insomnia among public health workers in Thailand. ....	66
Table 8 Binary logistic regression for the relationship between selected factors and Insomnia among public health workers in Thailand.....	68

## LIST OF FIGURES

	Page
Figure 1 The complication of insomnia to human body system.....	14
Figure 2 The Psychological Demand and Decision Latitude Model: Karasek Model	22
Figure 3 The office under Department of Disease Control, Ministry of Public Health Thailand .....	35



# **Chapter 1: Introduction**

## **1.1 Background & Rationale**

Sleep disorder is the one factor that as an important factor in the global burden of disease with related effects on mental health and cardiovascular diseases as well as injury and violent death through human error. Due to a range of factors are made this disease burden is poorly recognized. Insomnia is one of sleep disorder (Foundation). Individuals appearance of people with insomnia is can't sleep or difficult to fall asleep, stay asleep or woke up at night, or both them. People who be insomnia often wake up early than normal or don't feel refreshed when they wake up from sleeping, either.

Insomnia can define as the perception that a person's sleep is insufficient or abnormal. The person with insomnia may report difficulty falling asleep, a short sleep time, frequent awakenings, and nonrestorative sleep. The daytime symptoms of insomnia include fatigue, excessive daytime sleepiness (EDS), mood changes, and impaired mental as well as physical functioning. Insomnia is well known as a pertinent public health problem, with a complex etiologic (David Cunnington, 2013),(Doghramji, 2014). Insomnia can be caused by conditions such as stress, anxiety, depression, substance abuse, medical illness, or other sleep disorders(Krystal, 2012).

Sleep disorders can have negative effects on the immune system and metabolism (Luciana Fernandes Portela, 2015) as well as various health issues such as depression (Fernandez-Mendoza et al., 2015) hypertension (Y. Li et al., 2015), and coronary heart diseases (Megan Sands-Lincoln, 2013). Worker' sleep disturbances have significant effects on organizations' performances due to impairments in concentration, communication skills, decision-making, and flexible thinking. Sleep disturbances may be reduced by job motivation and poor leadership qualities (Gadinger et al., 2009). A number of investigations have reported an increase of sleep disturbances or insomnia due to high demands ,low job control, and job strain (de Lange et al., 2009; Gadinger et al., 2009; Theorell et al., 1988; Yoshioka et al., 2013).

Stress is an unavoidable component of life to complication and competitiveness in living standards. For world fast changing today, no one is free from stress and no occupation is stress-free. Everyone has experienced stress, also as it's within the family,

business, organization, study, work, or any other social or economic activity. Therefore in now a day, the stress in general and job stress in particular which become a part of life and has received considerable attention in recent years. It's become the core concern in our life, but everybody wants stress-free life. Stress is a subject which is hard to avoid. Stress is a part of day-to-day living. Every individual is subjected to stress either knowingly or unknowingly (Jayashree.Nayak, 2008).

Job stress can be defined as the harmful physical and emotional responses that will happen when the demand for the job does not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury ((NIOSH), 1999). Health-related stress in short-lived or infrequent episodes of stress poses little risk. But when stressful situations go unresolved, the body is kept in a constant state of activation, which increases the rate of wear and tears to biological systems. Finally, fatigue or damage results and the ability of the body to repair and defend itself can become seriously compromised. As a result, the risk of injury or disease escalates (Koinis et al., 2015).

There are many factors can be causes of job stress. Divided the cause of stress into two parts are the cause of stress from work and the cause of stress out of work. The cause of stress from working such as the workplace, Hours of work, position, traveling periods. External stresses include personal, family, and community factors. The cause of stress out of work such as Individual factor, family and society (R. Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981).

In 20 year ago, there are many studies that aims at the relationship between job stress and a variety of sickness. stress-related problems such as mood and sleep disturbances, upset stomach and headache, and disturbed relationships with friends and family that are quick to develop and usually seen in these studies. These early signs of job stress are commonly easy to recognize. But the effects of job stress on chronic diseases are more difficult to know because chronic diseases take a long time to develop and can be influenced by many factors other than stress. That evidence is rapidly accumulating to suggest that stress plays an important role in several types of chronic health problems-especially cardiovascular disease, musculoskeletal disorders, and psychological disorders. Health care expenditures are nearly 50% greater for workers

who report high levels of stress (Goetzel et al., 1998; Koinis et al., 2015). From the report of “Stress at work” by NIOSH showed that 40% of workers reported their job was very stressful, 25% showed their jobs as the number one stressor in their lives ((NIOSH), 1999).

Social support is a basic social requirement of human, people life must interact with others. Social support at workplace is a one kind of social support which including co-worker and supervisor supporting (Kristensen, 1995). From the study, mechanism of social support can reduce the impact of psychological stimuli on performance (Robert Karasek 1990). In the 5th European Working Conditions Survey (EWCS) in 2010 found that 63% reported feeling supported by their supervisor and 73% by their co-worker (Eurofound, 2010).

From previous studied, found the social support at workplace can improve the problem management and had interaction to human health (Malinauskiene, Leisyte, & Malinauskas, 2009). And also had negative association with insomnia, such as the studied of Kim in 2019 (S. Kim & Suh, 2019) : *Insomnia severity was significant associated with low level of social support* ( $B = -1.04$ ,  $SE = .27$ ,  $p < .001$ ).

In 2017 Thailand has mental health among working age (20 – 59 years old) especially suicide problem prevalence rate of finished suicide is 8.04 per hundred thousand populations (almost age around 35-59 years old). And from the statistic of obtaining mental health counseling services for working age through Mental Health Hotline 1323 show the mental health is the first problem among working-age more than 20,102 persons, followed by stress has more than 17,347 persons (DMH., 2017). Then In July – August 2018, Mental Health Centre 13 Bangkok survey job stress among working age in Bangkok (15 -60 years old from verity occupational=2,261 persons) found that 45% got job stress. In this number, one-fourth had a problem with sleeping (26% in female and 15% in male).

Health workers are all people engaged in actions whose primary intent is to enhance health. This meaning extends from the WHO definition of the health system as comprising activities whose primary goal is to improve health (WHO, 2006). Public health workers refer to a person who enhances health in term of distribution and determinants of health-related states or events, and how to prevent and control people

from illness. Their responsibility comes with the high pressure including workload, working hours, the conflict between different beliefs, lack of concern from the community, organize support and infectious.

From a study in Thailand (2016) showed the prevalence of occupational stress in health care providers was 53.5%. Risk factors of occupational stress in health care providers were monthly income, work rules, scope of work, work freedom, work skills, work responsibilities, workspace, and atmosphere of work, employee morale and relationships among Co-workers with statistical significance at 0.05 ( $P < 0.05$ ) (Vijittrapan, 2016).

There is limited research related to job stress and insomnia among public health workers in Thailand, now a day Public health workers have been challenged with several mental risk factors influencing insomnia presently. Given an increased understanding risk of insomnia especially among Public health workers intern of epidemiologists, it is better to identify the effect of link between job stress, social support, and insomnia among Public health workers. Therefore, this study aims to find the associations between job stress, social support, and insomnia among Public health workers in Thailand. Results of the study would provide benefit for further policy on stress management among public health workers in Thailand.

## **1.2 Research Question**

1.2.1 What is the prevalence of insomnia among public health workers in Thailand?

1.2.2 Is there an association between job stress and insomnia among public health workers in Thailand?

1.2.3 Is there an association between social support and insomnia among public health workers in Thailand?



### **1.3 Research Objective**

1.3.1 To access prevalence of insomnia among public health workers in Thailand.

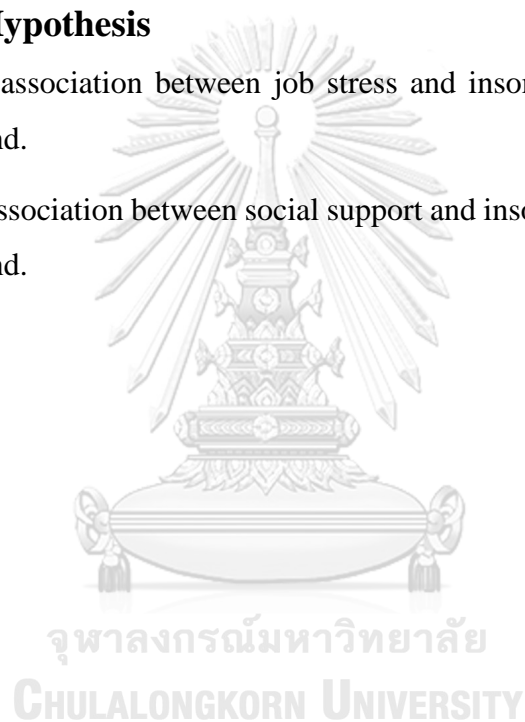
1.3.2 To access an association between job stress and insomnia among public health workers in Thailand.

1.3.3 To access an associations between social support and insomnia among public health workers in Thailand.

### **1.4 Research Hypothesis**

1.4.1 There is an association between job stress and insomnia among Public health workers in Thailand.

1.4.2 There is an association between social support and insomnia among Public health workers in Thailand.

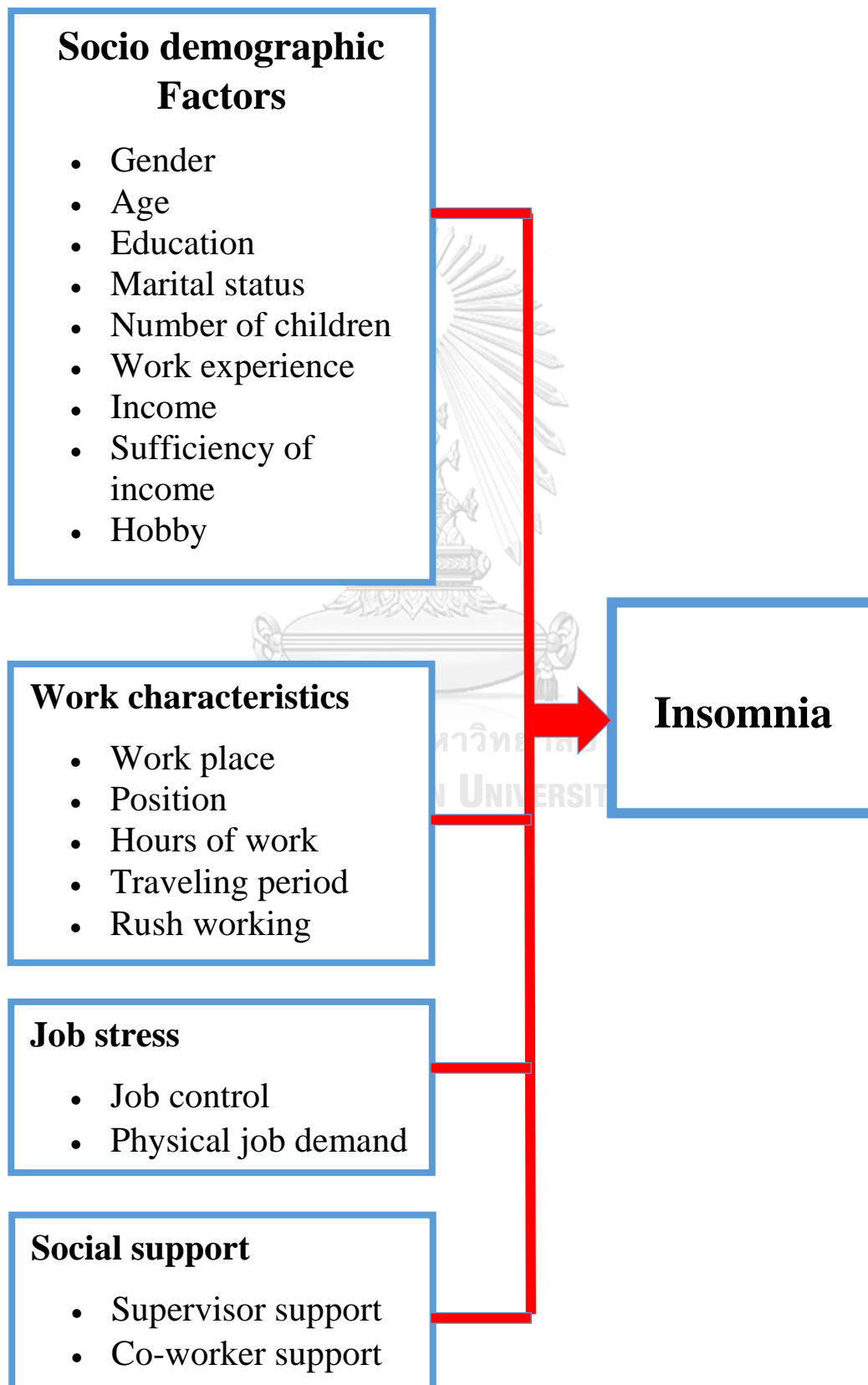


## 1.5 Conceptual framework

### Independent Variable

### Dependent

#### Variables



## 1.6 Operational Definitions

### **Public Health Worker:**

In this research “Public Health Worker” refers to those people whom responsibility to epidemiology's work (Surveillance and Investigation to find the cause, prevention and control disease in the area) such as doctors, nurse and public health scholar under ministry of Public Health, Thailand.

### **Socio-demographic Factors**

#### **Gender:**

Gender refers to male or female Public Health Worker

#### **Age:**

Age refers to the current age (in years), the integer is the year from birth until joined this research.

#### **Education:**

Educational level refers to the highest level of education. This study classifies into two parts. First descriptive classified into lower than bachelor, bachelor, master and higher than the master degree. For Association analysis classified into lower or equal to Bachelor's degree, and Master's degree or higher.

#### **Marital status:**

Marital status refers to the spousal condition. This study classifies into single, married, separated, widow and divorce (Regardless of Marriage or registration).

#### **Have children:**

Have children refers to sample have children (son, daughter) or not, the answer should be “Yes” and “No”.

#### **Work experience:**

Refers to the number of years that the participant works about epidemiology term.

**Income:** Income refers to the amount of salary and special remuneration received each month (in bath).

**Sufficiency of income:**

Sufficiency of income means monthly income earned compared with expenses. There are 3 groups for descriptive and chi-square analysis: not enough, enough but no save and enough with saving. But for Binary logistic regression was classified into Not enough and Enough.

**Hobby :**

The things or activity which person do in their free time such as listen to music, watch movies or entertainments, exercise, grown plant, etc. In this study defined hobby into “yes” or “no” hobby.

**Working Characteristics:** conditions of participants consisting of

**Workplace:**

Workplace refers to institute/office which participants are working.

**Position:**

Position1 refers to the current job description, there are 4 groups for descriptive analysis: public servant, government employee, permanent employee, and temporary employee. For Analysis part (chi-square analysis) were classified into a public servant and other government employees.

Position2 refers to the occupational of participants, there are 4 groups for descriptive analysis: doctor, nurse, public health officer, and others.

**Hours of work:**

Hours of work refer to the period of work or hours of work performed in a week, including overtime working (hours per week). For Analysis part (chi-square analysis) were classified into 35-40 hours per week, and higher than 40 hours per week.

**Traveling period:**

Traveling period to work refer to the time period that worker takes from home to office and back from office to home (minutes per day). For Analysis part (chi-square analysis) were classified into period equal or lower than the median, and period higher than the median.

### **Job stress:**

Stress is a status which happens when individuals recognize that the conditions or stress facing them may be more than their endurance. The term job stress can be defined as a group of external harmful factors in the work environment, which may be psychological, physical or social (Gharib, Jamil, Ahmad, & Ghouse, 2016). In this study, job stress will be quantified by using the JCQ (Job Content Questionnaire) (Karasek, 1979). Job stress in this study combines with “job control” and “psychological job demand”.

### **Job control:**

Job control is referred to the ability to influence of a person, when the things happen in their work environment, in particular to influence matters that are relevant to their personal goals. Job control may include control over work tasks, control over the work pace and physical movement, control over the social and technical environment, and freedom from supervision. In this study defined into “High” and “Low” level of job control.

### **Psychological job demand:**

Job demands are all physical, psychological, social or organizational aspects of a job that require continuous physical and/or psychological (i.e., cognitive or emotional) effort. So psychological job demand which refers primarily to the effort needed to deal with organizationally desired emotions during interpersonal transactions. Job control is referred to In this study defined into “High” and “Low” level of psychological job demand.

### **Social support**

Social support in the job is the interpersonal interaction which consists of emotional support caused by close ties, providing care and trust, supporting ideas decisions. It's due to respect and appreciation including advice, information, objects, goods or services as well as providing feedback and information for learning and self-assessment. From the co-worker and supervisors. In this study, social support will be quantified by using the JCQ (Job Content Questionnaire) (Karasek, 1979).

**Co-worker support :**

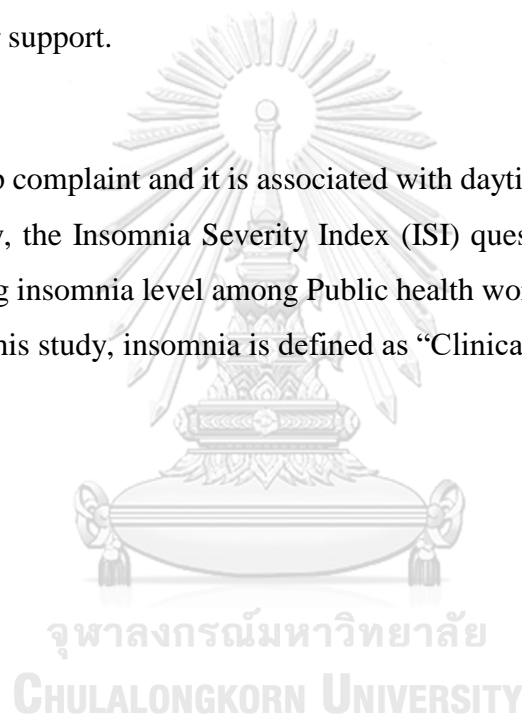
Co-worker refers to a person who works together, can share their knowledge, support, and expertise when others are faced with problems or novel situations. The relationship between co-worker can be related to workplace dynamics, individual stress level, and relationships. This study defined as “High” and “Low” level of co-worker support.

**supervisor support :**

Supervisor support refers to the extent to which leaders value their employees' contributions and care about their well-being. This study defined as “High” and “Low” level of supervisor support.

**Insomnia**

The common sleep complaint and it is associated with daytime impairments and health risks. In this study, the Insomnia Severity Index (ISI) questionnaire with 7 questions uses for identifying insomnia level among Public health workers (Bastien, Vallieres, & Morin, 2001). In this study, insomnia is defined as “Clinical” and “Non-Clinical”.



## **Chapter 2: Literature Review**

Literature review of job stress, social support, and insomnia which related to this study about an association between job stress, social support, and insomnia among Public health worker in Thailand. The content is as following...

### **2.1 Insomnia**

#### **2.1.1 Definition of Insomnia**

#### **2.1.2 Evidence of Insomnia**

#### **2.1.3 Health related of Insomnia**

#### **2.1.4 Insomnia among Public health workers**

#### **2.1.5 Measurements of Insomnia**

### **2.2 Socio-demographics**

### **2.3 Work characteristics**

### **2.4 Job stress**

#### **2.4.1 Definitions and effect of job stress**

#### **2.4.2 Concept of the theory of job stress**

#### **2.4.3 Tools to measure job stress**

### **2.5 Social support**

#### **2.5.1 Definition of Social support**

#### **2.5.2 Concept of the theory of Social support**

#### **2.5.3 Tools to measure social support**

### **2.6 Related study**

## 2.1 Insomnia

Insomnia is a type of sleep disorder. Individuals with insomnia find it difficult to fall asleep, stay asleep, or both. People who be insomnia often don't feel refreshed when they wake up from sleeping, either.

### 2.1.1 Definition of Insomnia

Insomnia is used in many ways in the medical literature and popular press. Almost Insomnia be defined by the difficulty of sleep which presence of an individual's report. For example, in survey studies, insomnia is defined by a positive response to either question, "Do you experience difficulty sleeping?" or "Do you have difficulty falling or staying asleep?" In the sleep literature, insomnia is sometimes used as a term to describe the presence of polysomnographic evidence of disturbed sleep. So, the presence of long sleep latency, frequent nocturnal awakenings, or prolonged periods of wakefulness during the sleep period or even frequent transient arousals is taken as evidence of insomnia (Sateia, Doghramji, Hauri, & Morin, 2000). Thus, insomnia has been thought of both as a symptom and as a sign. However, for the purpose of this paper, the term insomnia will be used as a disorder with the following diagnostic criteria: (1) difficulty falling asleep, staying asleep or nonrestorative sleep; (2) this difficulty is present despite adequate opportunity and circumstance to sleep; (3) this impairment in sleep is associated with daytime impairment or distress; and (4) this sleep difficulty occurs at least 3 times per week and has been a problem for at least 1 month. In medical can categorize insomnia in 3 types by following (JORDAN, 2019)

- A. Transient insomnia: can't sleep (nonrestorative sleep) for several days but not more than several weeks. Most often caused by stress, anxiousness about something, unsuitable of environments (such as smell, noise). For this type, everything will be better in a few days.
- B. Intermittent/acute insomnia: can't sleep (nonrestorative sleep) for several weeks. In this type caused by a health problem or a high level of stress. For the person who gets this state need to consult with the doctor/psychiatrist to a preventive chronic state.



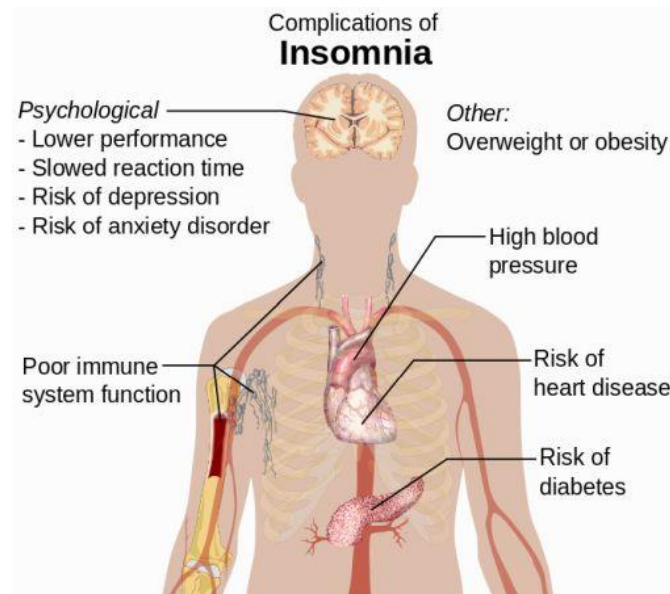
- C. Chronic insomnia: In this type, a person can't sleep (nonrestorative sleep) every day continuous for many months (in some case can continue for the year). This type is more complicated cause, some case cause from physical abnormal such as breathing while sleeping, spastic of leg muscle while sleeping and body pain. As well as cardiovascular disease lung disease and Gastroesophageal reflux disease, GERD, etc.

### 2.1.2 Evidence of Insomnia

The prevalence of insomnia by estimate depends on the population studied and the criteria used to define insomnia. A general consent has developed from population-based studies that approximately 30% of a variety of adult samples drawn from different countries report one or more of the symptoms of insomnia: difficulty initiating sleep, difficulty maintaining sleep, waking up too early, and in some cases, nonrestorative or poor quality of sleep (Ancoli-Israel & Roth, 1999). Conclusions from the NIH State-of-the-Science Conference held in June 2005 indicate that the addition of a diagnostic requirement that includes perceived daytime impairment or distress as a function of the insomnia symptoms results in approximately 10% prevalence of insomnia ("National Institutes of Health State of the Science Conference statement on Manifestations and Management of Chronic Insomnia in Adults, June 13-15, 2005," 2005). Finally, the application of more stringent diagnostic criteria, such as the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (Vahia, 2013), which includes the additional requirements that insomnia symptoms persist for at least 1 month and do not exclusively occur in the presence of another sleep disorder, mental disorder, or the direct physiological effects of a substance or medical condition, yields current prevalence estimates of approximately 6% (Ohayon, 1997).

In Thailand found prevalence of insomnia around 30 – 40 % (Pono, 2019) in every age group (or around 19 million person) . Which most of them are transient insomnia (short time insomnia) ,only 10% of them are chronic insomnia or had disorder of sleep more than 3 month with can related to health problem and efficiency of work as well.

### 2.1.3 Health-related of insomnia



**Figure 1** The complication of insomnia to human body system

From the figure shows that so many complications of insomnia. A lot of previous studies found that insomnia was a significant risk factor with cardiovascular disease (M. Li, Zhang, Hou, & Tang, 2014; Meng, Zheng, & Hui, 2013; Sofi et al., 2014). Especially, insomnia also is a risk factor for myocardial infarction (L. E. Laugsand, Vatten, Platou, & Janszky, 2011), chronic heart failure (Lars Erik Laugsand, Strand, Vatten, Janszky, & Bjørngaard, 2014), and arterial hypertension (Palagini et al., 2013). In old studied type, 2 diabetes can because by insomnia also (Anothaisintawee, Reutrakul, Van Cauter, & Thakkinstian, 2016). Moreover related to disease, there is evidence to show the association between insomnia and mental disorders (Riemann & Voderholzer, 2003). People with insomnia have to be increased the risk to develop to be a major depressive disorder at odds ratio 2.1 (Paunio et al., 2015). And also insomnia is a risk factor for sick leave, an increased number of accidents in the workplace and motor-vehicles accidents (Leger & Bayon, 2010; Meng et al., 2013; Sivertsen et al., 2009)

#### 2.1.4 Insomnia among Public health worker

Health workers are all people engaged in actions whose primary intent is to enhance health. This meaning extends from the WHO definition of the health system as comprising activities whose primary goal is to improve health (WHO, 2006). Public health workers are the position in Health Governance Organization. Which had responsibility of work related to education, analysis, research, diagnosis of problems in public health development, such as health education, health promotion, sanitation and disease control, etc. The main purpose of all policies, planning, and operations for well being of people.

Beyond this, Public health workers also work on measurement, supervisory, control, follow-up, and evaluation of the system. Sometimes have training or perform other related duties ((OCSC)) as follow .....

##### A. Operating :

- Studying, searching, analyzing and collecting data about public health such as Health promoting, surveillance and disease control, including recovering health and environments. Even, basic treatments, health service management, health behavior and health education, sanitary, environmental health. And improve/ public health's law enforcement for better health service.
- Write reports or academic's information among public health, offer supervisors for planning. Evaluation, analysis, and research about public health, for more appropriated of work.
- Holistic developing of knowledge, standard about public health and Health service. Make guidebook for people to access health information and guideline to take care of themselves.
- Action as health promotion, environmental health, disease control, surveillance, basic treatment, and follow up in the community.
- Create health information such as patient or risk person information, health status, outbreak situations, co-network. For analysis and improve the health system.

- Screening, diagnosis, basic treatment, investigation, following risk person for surveillance and health promoting. And also recovering people's health.
- Environment's evaluation workplace and other public/private workplace to prevention, control disease.

Planing: responsible for planning, participation in the planning of the work or project. In order to achieve the goals.

B. Communicating :

- Working within office and co-working between network to achieve the goals.
- Clarify and provide information details to co-workers and others. Understanding and cooperation in achieving the objectives.

C. Servicing :

- Check the quality of tools and equipment, support network organization.
- Academic's training and support to co-worker and others, for the efficiency of work.
- Academic's service such as paper, guidebook, tools and other information for the understanding of people.
- Participate in the development of individual potential, and organization. To get more experience and knowledge and get a better effect on work.
- Supervisory about public health'work to health volunteer.

From above public workers refer to a person who enhances health in term of distribution and determinants of health-related states or events, and how to prevent and control people from illness. Their responsibility comes with the high pressure including workload, working hours, the conflict between different beliefs, lack of concern from the community, organize support and infectious. So they easy to get stress and tried from work. That related to their health and also link to their sleep behavior. Much previous studied about sleep disorder but not much among public health workers. In 2017 Abeer M Alharbi studied (Abeer M Alharbi 2018), Assessment of Sleep Problems among Healthcare Providers in a Tertiary Care Hospital in Riyadh. The study aimed to

focus on the healthcare providers and the presence of sleep problems amongst currently working healthcare providers in King Abdulaziz Medical City. Almost half 52% of respondents had perceived sleeping problems. The percentage was greater women compared to men. Notably, those who are working in the alternating day and night shifts reported were more likely to have sleep problems (OR=0.33, 95% CI=0.13-0.82, p-value=0.017).

### 2.1.5 Measurements of Insomnia

This study used the Insomnia Severity Index (ISI), The ISI is a 7-item self-report questionnaire assessing the nature, severity, and impact of insomnia (Bastien et al., 2001). The usual recall period is the “last month” and the dimensions evaluated are: severity of sleep onset, sleep maintenance, and early morning awakening problems, sleep dissatisfaction, interference of sleep difficulties with daytime functioning, noticeability of sleep problems by others, and distress caused by the sleep difficulties. A 5-point Likert scale is used to rate each item (e.g., 0 = no problem; 4 = very severe problem), yielding a total score ranging from 0 to 28. The total score is interpreted as follows: the absence of insomnia (0-7); sub-threshold insomnia (8-14); moderate insomnia (15-21); and severe insomnia (22-28). Three versions are available patient, clinician, and significant others, but the present paper focuses on the patient version only. Previous studies have reported adequate psychometric properties for both the English and French versions (Bastien et al., 2001).

## 2.2 Socio-demographic Factors

Socio-demographic are the characteristics of a population. Generally, characteristics such as Gender, Age, Education, Marital status, Number of children, Work experience, Income, Sufficiency of income and Hobby. All of this can be the contributing factors for insomnia.

**Gender:** Epidemiological study of insomnia Found that females do not sleep more than males (Ohayon & Roth, 2001), because the reason that women have many

factors to disturb with sleep at night such as menstruation symptoms (breast engorgement, cramping, and headaches) (Anderson & Falestiny, 2000).

**Age:** There are certain biological changes that make sleep more difficult as we age. For example, older adults can experience a shift in circadian rhythm that causes them to become sleepy in the early evening and to wake up too early in the morning. Indeed, the 2005 NSF poll found that 64 percent of adults over 65 consider themselves a "morning person." That because When older, the structure of sleep will change. This is due to the reduction of neurons in the brain that is active in the delta wave, which is a brain wave that represents deep sleep in the 3rd and 4th stages of NREM or caused by The degeneration of the nervous system controls the functioning of biological rhythms that control sleep. Having a deep sleep period causes the elderly to wake up easily from various stimuli (Bliwise, 1992).

**Education:** The study of “Who Gets the Best Sleep? Ethnic and Socioeconomic Factors Related to Sleep Complaints” found that higher levels of education are associated with fewer Sleep Complaints, consistent with the findings associated with income (Grandner et al., 2010).

**Marital status:** Marital status is one of the insomnia problems. A person who is married will have one role: Being a family head is responsible for taking care of family members to be happy. The previous study shows that marital status is different will cause a difference in job stress and health problem. Single people are often committed to working with satisfaction. Satisfied with their own work, making single status more stressful from work than marital status (Nomaguchi, 2012) . And should be more with taking care of children.

**Work experience:** This is one of the important factors in working when Individuals working for a certain period of time have learned to have more work experience, have a position to work The work is better, resulting in pride and satisfaction in the work done. In addition, it helps people to have more convincing and rational (Asegid, Belachew, & Yimam, 2014) is a collection of experience in performance. The work system makes it possible to face many obstacles. Understanding the work performed and good job responsibilities can be expected to be better in the future than those who are in the profession. For a long time to learn and be kind, what

is good or bad? What should risk or should not take risks, including Can consider analyzing and solving problems that are facing stress from working well (Asegid et al., 2014).

**Income and sufficiency of work:** Income is an important factor in daily life in which people who work differently expect the appropriate compensation or higher than the work performed. If the high income of work will make job satisfaction, but low income or less than expected that practices cause dissatisfaction. In addition sufficiency of work can be a stressor and related to health such as insomnia. Which is found in the old study, said that the adequacy of income affects job stress significantly at the level of 0.05.

### 2.3 Working Characteristics

As you know, insomnia is caused by many reasons. But one of the major causes in this era is job stress or work characteristics. There are many ideas to describe the mechanism of job stress. Living, every human being has to work for a living to live in society, so it must be related to the environment and must adapt to be in the environment. That makes the pressure and causes of stress. It's can occur to people of all ages and backgrounds, but they can occur in different ways and at different levels of stress. Each person can cope it if managed it in rapid and equilibrium time shall have the opportunity to life's success. But people who can't manage or have not been able to reduce stress can disturb your sleeping time. Workplace hours of work position and traveling period. In this study including Workplace, Hours of work, Position, and Traveling period.

**Workplace:** Given the scope of the impact of insomnia, it is not surprising that the disorder has been linked to problems in the workplace. The importance of adequate sleep and time away from work has increasingly become the subject of public discussion in light of revisions to work policies affecting positions of high risk to public safety, such as public health workers, commercial airline pilots, and commercial vehicle drivers. The results from the America Insomnia Survey (AIS) support the idea that sleeplessness is negatively impacting the U.S. work environment (Foundation). Data were collected from 4,991 working Americans interviewed by telephone about

insomnia and 18 other chronic medical conditions (e.g., cardiovascular, respiratory, and neurological disorders). An estimated 20% of those surveyed reported experiencing insomnia for at least 12 months, with even higher rates reported among women and workers age 45 to 64 years(Foundation).

**Hours of work:** the previous study found that long working hours as a predictor of disturbed sleep in a large occupational cohort of British civil servants. We found that > 55 working hours per week predicted incident sleep disturbances among employees free from such disturbance at baseline. The effects were slightly stronger for working hours measured repeatedly than at only one point in time suggesting a dose-response association between long work hours, incident shortened sleep, and difficulty in falling asleep (i.e., sleep-onset insomnia). We repeated all the analyses with working hours treated as a continuous variable and with datasets in which missing values were imputed. The results on long working hours and shortened sleep and difficulty in falling asleep were robust and not totally explained by known risk factors such as health behaviors or health status. However, adjustments suggested that high job demands may partially explain the association between long working hours and sleep disturbances. To our knowledge, this is the first prospective cohort study to examine the association between repeat exposure, i.e., long working hours measured at 2-time points, and subsequent sleep disturbances, independently of known risk factors (Virtanen et al., 2009).

**Position:** Responsibility Decision Making and job security form position at work. Highly responsible individuals will have high stress and risk to insomnia, especially employees at the executive level. Must decide and be responsible for various plans in order to achieve the set goals, including Responsible for the performance of the subordinates(Foundation).

**Traveling period:** Problems caused by travel, such as Traffic jams, problems, and obstacles that cause slow travel, such as rain (Foundation), buses which can make long hours of traveling period per day .this can also cause high stress and risk to insomnia.



## **2.4 Job stress**

### **2.4.1 Definitions and effect of job Stress**

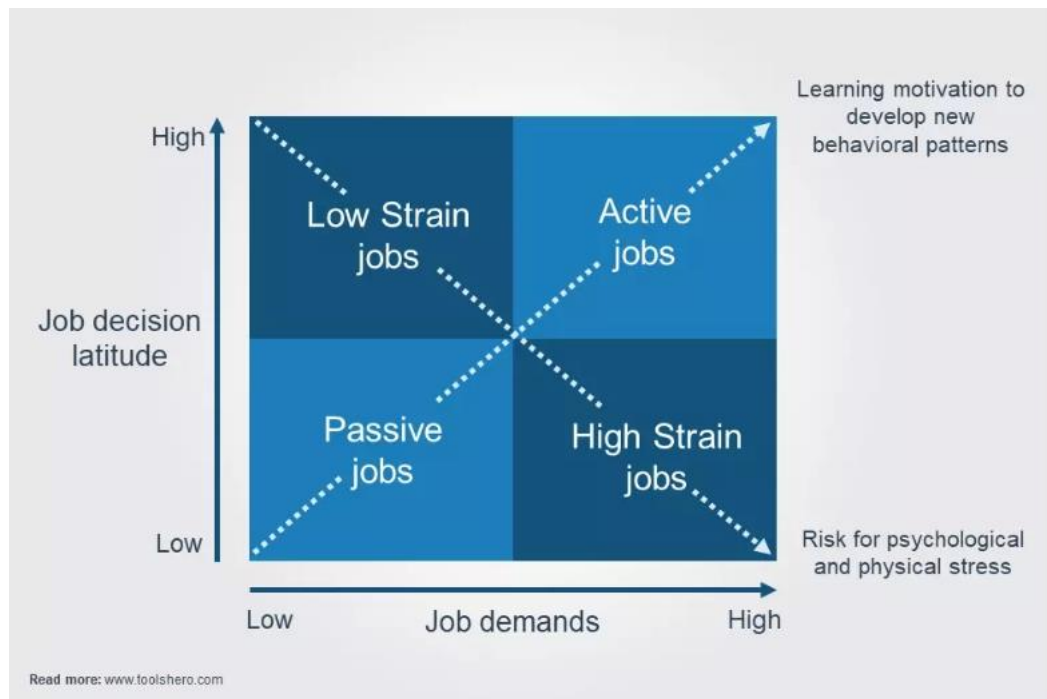
Job stress refers to feelings resulting from environmental factors, such as excessive workload, confusion, and conflict in roles, bad working conditions, high responsibility, and poor relationships (COOPER & MARSHALL, 1976). Persons suffering from stress have the potential to cause physical illness and poor mental health. There is also a definition of job stress. It is a positive and negative factor to the person in the workplace, such as encouraging people to work. Or cause stress and lack of balance of physical and mental health (Robert Karasek 1990).

The effects of stress that can be demonstrated in many ways, including rapid heartbeat, fast breathing, muscles' tight, restless, worrying about unrealistic issues, be unconscious, absent-minded, aggressive or insomnia, etc. Because it can the physical, psychological and behavioral assessment, which gave a clear and accurately determine the actual levels of stress (Kottler & Chen, 2011).

Concluding that job stress refers to the person's response to the threat from the environment when standing with the pressure. In the management, conflict of personnel, time, number of roles and duties, which affect the body and mind of the person and effect on the job quality and effectiveness of work.

### **2.4.2 Concept of the theory of job stress**

Job demand-control model, this model is made by Robert Karasek since 1976 (Karasek, 1979). By separate characteristics of the social psychology work environment into 2 parts and considering the relationship of both elements are (1) Psychological Demand and (2) Control or Decision Latitude, which the reaction between the two elements will be causing in two aspects of the worker are (1) The results of proactive learning and the development of new behavior pattern and (2) Risk of stress and illness. From that results only having a high demand for work doesn't mean always relate to job stress, but also depend on the control of work.



**Figure 2** *The Psychological Demand and Decision Latitude Model: Karasek Model*

From Job demand-control model, Robert Karasek (Karasek, 1979) had to put it in a diagram. The horizontal shows the job demand, which can be high and low. For the vertical shows the decision latitude, which can also be high and low. Then occupational can be separated follow by Psychological Demand in 4 groups including

- Active Jobs: This group combination with very high requirement (high demand) and also high decision-making opportunities and self-control. This jobs working with a challenging situation and a job according to the profession, this type of work is a job that has a high demand and the workers have the opportunity to make decisions or control by themselves as well.

- Passive Jobs: This group combination with low requirement (low demand) and also workers have low decision-making opportunities and self-control.

- High strain/stress Job: This group combination with very high requirement (high demand) and low decision-making opportunities and self-control without job support. Workers have to do following demand from the supervisor. The lack of decision latitude can be the result of deadlines as well

- Low strain/stress Job: This group combination with low requirement (low demand) and high decision-making opportunities and self-control with job support. This section include the most routine jobs.

#### **2.4.3 Tools to measure job stress**

This study used the Job Content Questionnaire (JCQ) from the Job Demand-Control Model (Karasek, 1979). This model is the basic model of the social psychological environment in which work stress can be predicted that affect health status. This model was developed in 1976 and continues to evolve. It has two components: job demand and job control, the two components that affect (1) Active learning and development of new behavior patterns and (2) Psychological strain and illnesses. Although Karasek's model and strain gauges are widely used in both theoretical and predictive health outcomes both in Europe and America.

In Thailand Pichaya Pakthongsuk (Phakthongsuk, 2009), Use tools to monitor and adapt to the social, cultural and economic conditions of the Thai people. Test of accuracy and adaptation of the Karasek measure for Thai people by conducting content validation by translating Karasek from English into Thai.

### **2.5 Social Support**

Humans are social beings, which need to communicated , relationship/shared and need support from others. Social support is the social relationships that can be measured as the perception that one has assistance available, the actual received assistance, or the degree to which a person is integrated in a social network. Support can come from many sources, such as family, friends, pets, neighbors, coworkers, organizations.

This study aimed to social support at workplace, it is true that they spend more time at work with their co-workers than with their family. From most of the research observation that showed social support is an important factor affecting the health and well-being of humans. These findings have encouraged researchers, to investigate the mechanisms underpinning social support in the workplace and its respective links to worker's health and well-being further; and as well to investigate how social support

can be compiled into workplace rule, practices, and interventions (Rahnfeld, Palmeka, & Cox., 2013). Social support is a basic social requirement of the human; people must interact with others. In work, it must involve many parties. From supervisor, co-worker, subordinate including family members. If persons are accepted and supported by those, will help to keep the operation smooth.

### **2.5.1 Definition of Social support**

Social support is regarded as resources provided by others, as coping assistance, as an exchange of resources, or even as a personality trait (Schwarzer & Knoll, 2007). Many studies agree that giving and receiving social support is an interactive process and must be regarded under the concept of reciprocity, which refers to giving support which is positively associated with receiving it (Bowling, Beehr, & Swader, 2005; Schwarzer & Knoll, 2007).

House 's definition (House, 1981) social support that is the interpersonal interaction which consists of emotional support caused by close ties, providing care and trust, supporting ideas decisions. It's due to respect and appreciation including advice, information, objects, goods or services as well as providing feedback and information for learning and self-assessment.

Social support in the workplace be supportive in the workplace from the co-worker and supporting from the supervisor in the workplace. Linked to all levels of social support that are beneficial to the workplace. And supervisor Social support mechanisms can reduce the impact of psychological stimuli on performance (Robert Karasek 1990). Social support factors from Karasek & Theorell's concept improve by Kristiansen, have 2 part supports from the supervisor and co-workers (Kristensen, 1995). It helps reduce the impact of stress from work and can play an appropriate role within the organization. In the 5th European Working Conditions Survey (EWCS) in 2010 found that 63% reported feeling supported by their supervisor and 73% by their co-worker (Eurofound, 2010). However, this data is the only representative of the European context. There is difference study, the First Korean Working Conditions Survey in 2005 found that only 23% of South Korean worker reporting be supported by their supervisor, 29% by their co-worker (Park & Lee, 2009).

Concluding that social support means that people receive attention, encouragement, acceptance, socializing, intimacy, financial assistance, emotion, information, advice, supplies. Including receiving advice, solving problems in terms of work and personal issues. Getting support for all to make the persons feeling that they are valuable, which this social support will help people to pass the stress faster, causing morale and encouragement, being able to live properly in society.

### **2.5.2 Concept of the theory of Social support**

Almost of study always used 2 theories (Callaghan & Morrissey, 1993) of social support are ...

1. The buffer theory: This concept proposes that social support is the main component for prevention and threats the illness as a variable that acts as a buffer to support the stress.

2. The attachment theory: This concept proposes that social support is something that showed the affection of people. Whoever has a strong and affair of love when was young, that person will be more able to create a relationship of social support in adults.

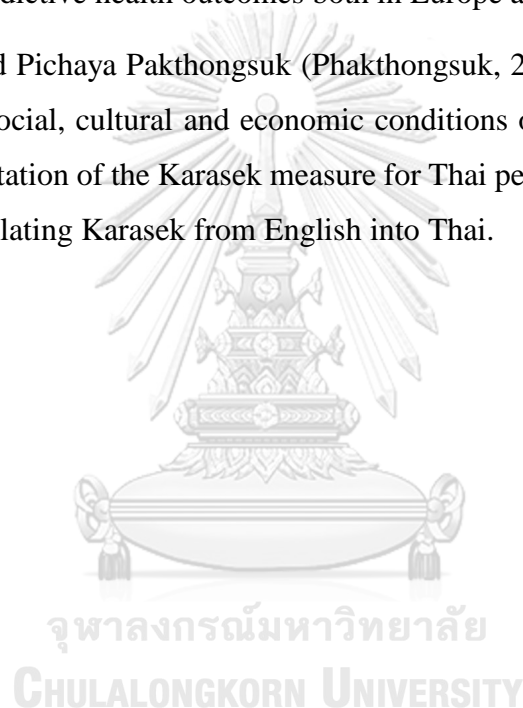
Social support in the workplace had a connection of all level of social support for the benefit of working both supporting from supervisor and co-worker (Robert Karasek 1990), which social support mechanisms can reduce the impact of psychological stimuli in operations. Social connections and social structure can affect long term well-being and new knowledge. In addition, social support can improve the problem management and also have interaction between social support and health protection behavior (Malinauskiene et al., 2009).

In this study used social support model by Johnson (Johnson, Hall, & Theorell, 1989) and Kristensen (Kristensen, 1995) to explain the supporting from supervisor and co-worker which add into Job demand-control model (Robert Karasek 1990). This showed supervisor and co-worker support can able to appropriately role play within the organization.

### 2.5.3 Tools to measure social support

This study also used the Job Content Questionnaire (JCQ) from the Job Demand-Control Model (Robert Karasek 1990). This model is the basic model of the social psychological environment in which work stress can be predicted that affect health status. This model was developed in 1976 and continues to evolve. It has two components: job demand and job control, the two components that effect to (1) Active learning and development of new behavior patterns and (2) Psychological strain and illnesses. Although Karasek's model and strain gauges are widely used in both theoretical and predictive health outcomes both in Europe and America.

In Thailand Pichaya Pakthongsuk (Phakthongsuk, 2009), Use tools to monitor and adapt to the social, cultural and economic conditions of the Thai people. Test of accuracy and adaptation of the Karasek measure for Thai people by conducting content validation by translating Karasek from English into Thai.



## 2.6 Related study

References	Study's Population	Study's Design	Result
(Abeer M Alharbi 2018)	154 Healthcare providers	Cross-sectional study	Almost half 52% of respondents had perceived sleeping problems. The percentage was greater women compared to men. Notably, those who are working in the alternating day and night shifts reported were more likely to have sleep problems (OR=0.33, 95% CI=0.13-0.82, p-value=0.017).
(de Lange et al., 2009)	1163 Dutch employees	Cross-sectional study	They found that, there are positive significant association between job demands and job control across time with sleep quality and fatigue. They suggested that higher levels of job demands are related to more sleep complaints ( $\beta=0.07$ , $P<0.05$ ). And time 3 job control influenced time 4 sleep quality ( $\beta = -0.07$ , $P < 0.05$ ).
(Grandner et al., 2010)	159,856 participants from the Behavioral Risk Factor Surveillance System	Cross-sectional study	<ul style="list-style-type: none"> <li>- Education level was an inverse relationship between Sleep Complains, with the lowest education level predicting the highest SC in both gender groups (P-value &lt; 0.0001).</li> <li>- There were associated significant between Sleep Complain and marital status, which the highest likelihood of reporting Sleep Complain occurred in</li> </ul>

			all non-married groups of men and women(P-value < 0.0001).
			- Both men and women had significantly increased Odds Ratio for Sleep Complain compared to the reference category (income greater than \$75,000) (P-value < 0.0001).
(H.-C. Kim et al., 2011)	8,155 workers	Cross-sectional study	They found that, the person who had high job stress significantly with insomnia , and also significant after adjustment confounding variables (high job demand: OR: 1.30, 95% CI: 1.14-1.47; insufficient job control: OR: 1.13, 95% CI: 0.99-1.29; inadequate social support: OR: 1.30, 95% CI: 1.14-1.47; job insecurity: OR: 1.25, 95% CI: 1.11-1.44; organizational injustice: OR: 1.27, 95% CI: 1.12-1.44; lack of reward: OR: 1.18, 95% CI: 1.04-1.34;; total job stress: OR: 1.45, 95% CI: 1.28-1.64).
(S. Kim & Suh, 2019)	155 Students, university in Seoul, Korea	Cross-sectional study	They found that, Insomnia severity was significantly associated with low levels of social support (B = -1.04, SE = .27, p < .001).



(Luciana Fernandes Portela, 2015)	3,229 Nurses at public hospitals, Rio de Janeiro, Brazil.	Cross-sectional study	The prevalence of insomnia was 34.3%. They found that, the job stress was associated with increased odds for insomnia symptoms (OR: 2.20 and the combination of emotional demands and low job control (OR: 1.99).
(Puangsoi Worakul, 2006)	260 Fight attendents	Case and control study	They found that, Risk factors related to insomnia were Single ( $P < 0.05$ , 95% CI=1.11-3.12), Smokind ( $P < 0.05$ , 95% CI=1.12-3.66), caffeine consumption ( $P < 0.05$ , 95% CI=1.13-3.11), alcohol consumption ( $P < 0.05$ , 95% CI=1.04-2.83), non sufficiency of income ( $P < 0.01$ , 95% CI=1.25-3.94), and having mental problem ( $P < 0.01$ , 95% CI=1.54-5.55).
(Yang et al., 2018)	Literature from across Europe and Asia	Meta-analysis	The results showed that, high level of job stress significant associated with increased risk of suffering insomnia (random OR = 1.73, 95% CI 1.46-2.05). When Higher demand was significantly associated with increased risk of insomnia (OR = 1.35, 95% CI 1.20-1.51), while the pooled effect of low control was not found to be statistically significant.

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(Yoshioka et al., 2013)	5,951 male governances employees, Japan	Cross-sectional study	<p>The results showed that 1,382 (23.2 %) participants suffered from insomnia. Lower employment level was significantly associated with a higher risk of insomnia. Job strain (ratio of job demand to job control), E/R (ratio of job effort to job reward), and OC (overcommitment) were also significantly associated with insomnia. The relative excess risk due to the interaction between employment level and psychosocial environment (job strain, E/R, and OC) was 0.09 (95 % CI -0.57 to 0.76), 2.61 (0.74 to 4.48), and 3.14 (0.82 to 5.45), respectively; synergy index = 1.07 (0.66 to 1.74), 1.99 (1.37 to 2.90), and 2.25 (1.46 to 3.46), respectively.</p>
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## Chapter 3: Research Methodology

### 3.1 Research Design

This study is an analytical cross-sectional study which conducted during March - July, 2019. The main purpose of this study is to understand associations between job stress, social support, and insomnia among public health worker in Thailand.

### 3.2 Study Area

This study focuses on an organization under the Ministry of Public Health, Thailand.

### 3.3 Study Population

The study population was doctors, nurse, public health scholar and others who work under the ministry of Public Health, Thailand. The total number is 1,853 persons.

#### 3.3.1 Inclusion criteria

1. Doctors, nurse, public health scholar and others whom the responsible for public health in Thailand.
2. Experience of work for more than 1 years.
3. Both gender male & female.
4. Willingness to participate in this study.
5. Working time not less than 35 hours/week

#### 3.3.2 Exclusion criteria

1. Director of each Department
2. Under prescription/treatment of psychological drug by physician
3. Having underlying disease diagnosed by physician related to sleep disorder e.g. Obstructive Sleep Apnoea (OSA).

### 3.4 Sample & Sample size

Calculate the sample size using the formula. [9]

$$n = \frac{Z_{2\alpha / 2}^2 NPQ}{Z_{2\alpha / 2}^2 PQ + (N - 1) d^2}$$

When ....

$n$  = sample size, when the exact population was known.

$N$  = apparent population size

$P$  = Prevalence of insomnia reported by Asian Sleep Research Society was 52.0% (Zailinawati, Ariff, Nurjahan, & Teng, 2008).

$Q = 1 - P (=0.48)$

$d = 0.05$  (5% deviation)

$Z_{2\alpha / 2}$  = standard value according to the statistically significant level 95% = 1.96

$$\begin{aligned} n &= \frac{(1.96)^2 (1,853) (0.52) (0.48)}{(1.96)^2 (0.48) (0.52) + (1,853 - 1) (0.05)^2} \\ &= 317 \end{aligned}$$

From the calculation get 317 samples, but in this study, we collected the data by self-report and sent back through mail/letters which have a chance to lose. Therefore, the researcher adds 10 % from this result to save the loosen. The sample size for this study was 350 participants.

### 3.5 Sampling Technique

This study used quota sampling technique.

- The first step in probability quota sampling has divided the population into exclusive 14 subgroups (Office of Disease Prevention & Control 1-12, Institute for Urban disease control and prevention, Bureau of Epidemiology).
- Then, calculated the ratio of each part of the population in each subgroup in the population. And set the quota of each sample to be selected following the proportion.
- The final step ensures that the sample was representative of the entire population. It also allowed the researcher to studied traits and characteristics that were noted for each subgroup.

#### 3.5.1 Table of the questionnaire's distribution (From quota sampling technique)

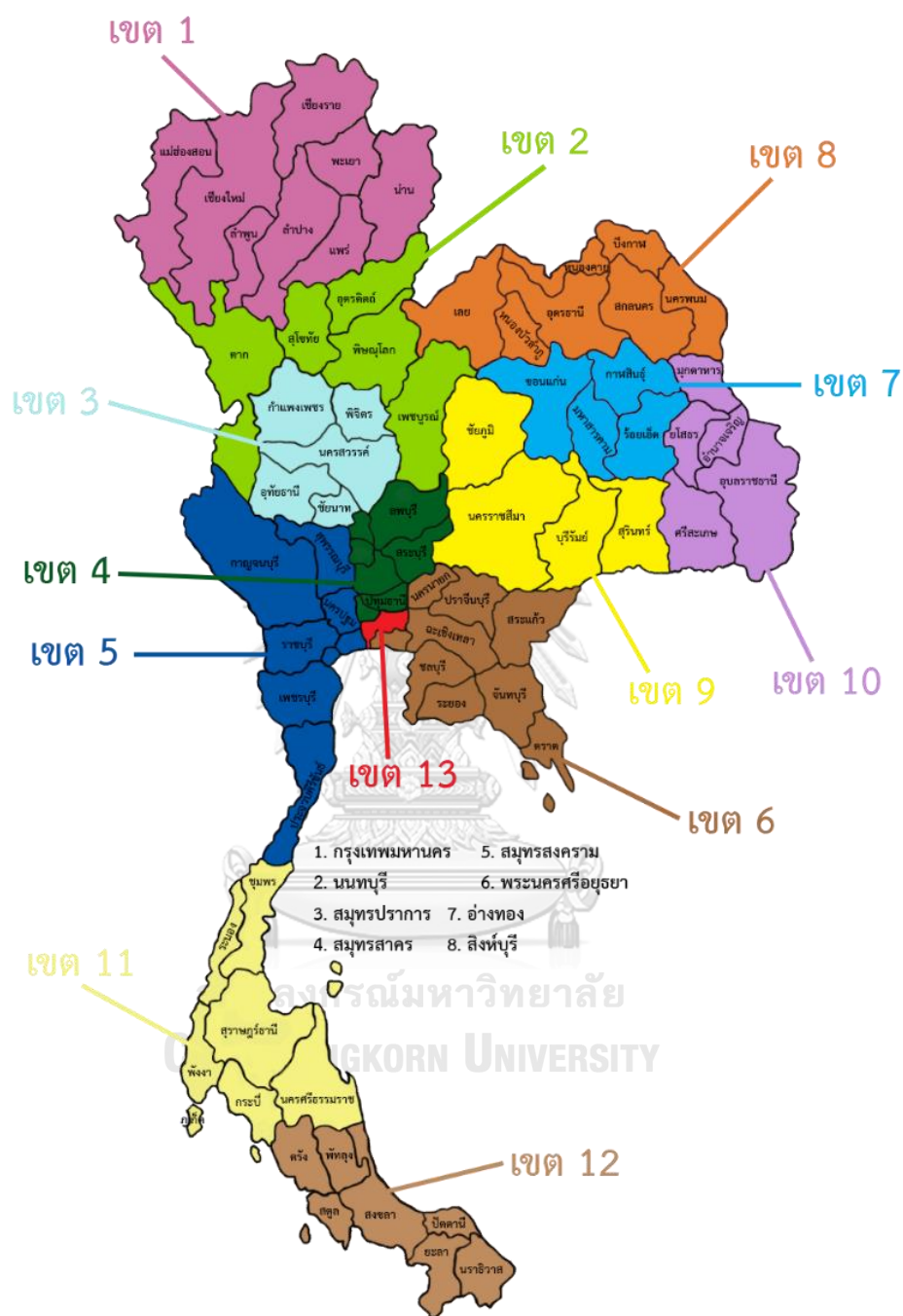
List of Department	Population	Proportion of participants (Number)
ODPC 1	196	37
ODPC 2	134	25
ODPC 3	109	21
ODPC 4	74	14
ODPC 5	158	30
ODPC 6	197	37
ODPC 7	103	19
ODPC 8	103	19
ODPC 9	128	24

ODPC 10	103	20
ODPC 11	189	36
ODPC 12	198	37
IUDC	77	15
BOE	84	16
	1,853 of public health workers	350 participants

Note: ODPC: Office of Disease Prevention and Control

IUDC : Institute for Urban disease control and prevention

BOE : Bureau of Epidemiology



**Figure 3** The office under Department of Disease Control, Ministry of Public Health Thailand

### 3.6 Measurement Tools

This study researcher used a self-report questionnaire as a research tool. There are 4 parts, as the following:

Part 1: General and working information questionnaire.

Part 2: Job stress questionnaire. Including 2 sections.

Section 1: Job control

Section 2: Psychological Job Demand

Part 3: Social Support questionnaire.

Part 4: Insomnia Severity Index

**Notation:** For the Thai-JCQ (Thai Job Content Questionnaire) by Pitcha Phakthongsuk (Phakthongsuk, 2009). This study used for part 2 Job stress questionnaire and part 3 social support. Because the researcher focused on two of this (Form thesis conceptual framework). And from reviewed the tools found that, choosing 2 parts of tools it wasn't affecting to the result's calculation in the above mentioned.

#### **Part 1: General and working information questionnaire:**

This part consisted of 2 factors are socio-demographic factors and working characteristics. In aspects of socio-demographic factors including gender, age, education, marital status, have children, work experience, income, the sufficiency of income and hobby. In aspects of working characteristics including workplace, hours of work, position, and traveling period to work.

#### **Part 2: Job stress questionnaire:**

This part used the Thai-JCQ (Thai Job Content Questionnaire) by Pitcha Phakthongsuk (Phakthongsuk, 2009). The Thai-JCQ (Thai Job Content Questionnaire) was translated into the Thai language in 2009 from JCQ (Job Content Questionnaire) as a Demographic-Control Model of Karasek (Karasek, 1979) to measure job stress level. The question scale was a rating scale. It consists of 22 questions that asked for



feelings or opinions on each side. There were 2 aspects, the control of the work (9 positive questions number 1-9), and the psychological demand of the work (13 negative questions: number 10 – 22 ). According to the Likert scale 4 levels with the following criteria (same score both positive and negative questions)

Very agree	get	4	score
Agee	get	3	score
Disagree	get	2	score
Very disagree	get	1	score

There is 2 step to get the resulting high – low level of stress.

**Step 1:** Separated each part (the demand of the work and the control of the work) in 2 groups were High and Low by the average score. Use the criteria for dividing an average value into 2 levels and the meaning of the score was as following

The Control of the work Calculated by :

$$2 \times (Q1 + Q2 + Q3 + Q4 + Q5 + Q6 + Q7 + Q8 + Q9)$$

- Score less than average mean Low control of the work
- Score more than average mean High control of the work

The pyschological demand of the work Calculated by :

$$[0.9 \times (Q10 + Q11 + Q12 + Q13 + Q14 + Q15 + Q16 + Q17 + Q18 + Q19)]$$

$$+ [3 \times (Q20 + Q21 + Q22)]$$

- Score less than average mean Low pyschological demand of the work
- Score more than average mean High pyschological demand of the work

**Step 2** group the result of step 1 for now the level of stress by Demand-Control Model of Karasek (Karasek, 1979).

### **Low level of job stress**

- Low demand of the work + High control of the work
- High demand of the work + High control of the work
- Low demand of the work + Low control of the work

### **High level of job stress**

- High demand of the work + Low control of the work

### **Part 3: Social Support questionnaire:**

This part a questionnaire about social support from the supervisor and co-worker. The researcher used the Thai-JCQ (Thai Job Content Questionnaire) by Pitcha Phakthongsuk (Phakthongsuk, 2009). The Thai-JCQ (Thai Job Content Questionnaire) was translated into the Thai language in 2009 from the JCQ (Job Content Questionnaire) as a Demographic-Control Model of Karasek (Karasek, 1979). This questionnaire was a rating scale. It consisted of 8 questions, the questionnaires were divided into 2 aspects: social support from supervisors (4 positive questions: number 1-4 ) and social support from co-worker (4 positive questions: number 5 - 8). According to the Likert scale 4 levels with the following criteria (same score both positive and negative questions)

Very satisfied	get	4	score
Satisfied	get	3	score
Dissatisfied	get	2	score
Very dissatisfied	get	1	score

Calculating the result by the score each part of social support and the total score (combine supervisor and co-worker). With combining the scores of each respondent and finding the average. Use the criteria for dividing an average value into 2 levels and the meaning of the score was as following

#### Supervisor /Co-worker

Total each score higher than average mean High level of super/co-worker support

Total each score lower than average mean Low level of super/co-worker support

Socail support Calculated by :

$$2.25 \times (Q.1+Q.2+Q.3+Q.4+Q.5+Q.6+Q.7+Q.8)$$

Total score higher than average mean High level social support group

Total score lower than average mean Low level social support group

#### **Part 4: Questionnaire Insomnia Severity Index:**

This part used the Insomnia Severity Index (ISI) (Morin, Belleville, B  langer, & Ivers, 2011) ,which uesd in Thai version from Assist. Prof. Sontuss Bussaratid. (Bussaratid., 2012) . The Insomnia Severity Index (ISI) has seven-otem self-report questionnaires . Each items are rated on Likert-type scale from 0 to 4 score, and the seven answers are added up to get a total score. Total score is 28 score. The meaning of the score are as following

- |                       |      |                                       |
|-----------------------|------|---------------------------------------|
| - Score between 0-7   | mean | No clinically significant insomnia    |
| - Score between 8-14  | mean | Subthreshold insomnia                 |
| - Score between 15-21 | mean | Clinical insomnia (moderate severity) |
| - Score between 22-28 | mean | Clinical insomnia (severe)            |

In this study defined insomnia into 2 levels are Non-Clinical (lower than 8 scores) and clinical (equal or more 8 scores) insomnia.

### 3.7 Reliability and Validity study of the instruments

The reliability of the instruments been tested via a pilot test conducted in a group of 30 Public health workers under ministry of Public Health, Thailand. This test conducted with an interval one month to access test-retest reliability. The feedback and responses from the pilot was used to make changes and incorporate them into the final instruments.

#### Reliability of the instruments (N=30):

In this study reliability 'scale was estimate trough Cronbach's alpha and showed good results: Part 1: General and working information questionnaire  $\alpha = 0.86$ , Part 2: Job stress questionnaire  $\alpha = 0.83$ , Part 3: Social Support questionnaire  $\alpha = 0.89$ , And Part 4: Insomnia Severity Index  $\alpha = 0.86$

Although the questionnaires that be applied in this study be a standard questionnaire and were used by many researchers, the validity from the previous studies still essential.

#### The validity of the instruments:

The Thai-Job Content Questionnaire (TJCQ): for the questionnaires part 2: job stress and part 3: social support questionnaires.

There was a study to test the construct validity of the Thai-job content questionnaire (TJCQ) in 2009 by Pitchaya Phakthongsuk(Phakthongsuk, 2009). This studied were descriptive study recruited 10,415 participants from various occupations according to the International standard classification of occupations. This instrument consisted with 48 questions of the Job Content Questionnaires. Eight items newly developed by the authors from in-depth interviews were added (but finally, after exploratory and confirmatory factor analysis this instruments were 45 questions.

The exploratory factor analysis showed that six factor models of work hazards, decision latitude, psychological demand, social support, physical demand, and job security. However, supervisor and co-worker support were not distinguished into two factors and some items distributed differently along the factors extracted. Confirmatory

factor analysis supported the construct of six latent factors, although the overall fit was moderately acceptable. Cronbach's alpha coefficients higher than 0.7, supported the internal consistency of TJCQ scales except for job security (0.55).

Pitchaya Phakthongsuk's study showed that Thai-Job Content Questionnaires was valid and reliable as a good measuring tool for job stress level among Thai populations.

#### Insomnia Severity Index (ISI):

From the study of The Insomnia Severity Index: Psychometric Indicators to Detect Insomnia Cases and Evaluate Treatment Response (Morin et al., 2011). Studied in individuals selected from the community 959 participants (Community sample), 183 individuals evaluated for insomnia treatment and 62 controls without insomnia (Clinical sample).

The result showed that ISI internal consistency was good for all samples/participants (Cronbach  $\alpha$  of 0.90 and 0.91). This has response analysis revealed suitable discriminatory capacity for 5 of the 7 questions. Convergent validity was supported by significant correlations between total ISI score and fatigue's measurement, quality of life, anxiety, and depression. A cut-off score of 10 was optimal (86.1% sensitivity and 87.7% specificity) for detecting insomnia cases in the community sample. In the clinical sample, a change score of -8.4 points (95% CI: -7.1, -9.4) was associated with moderate improvement as rated by an independent assessor after treatment. That means the Insomnia Severity Index (ISI) has reliability and validity instrument to detect the insomnia cases in the populations.

### 3.8 Data Collection

The researcher collected the data after pass the ETHICS committee, Chulalongkorn University, No. 065/62 as following step:

3.8.1 Researchers send the request form from the College of Public Health Science to the director of each department under the ministry of Public Health, Thailand. To request information about the sample group, clarification of research objectives, the scope of research, time to collect the data, research tools, steps to conduct research, expected or benefits from this study. Requesting permission to collect data, conducting data collection, sampling, and allowing the sample group to introduce the sample group.

The researcher contacted with the sample group to request permission via electronic mail. When the sample group agrees to answer the questionnaire and send the electronic letter back with the address for the delivery of the questionnaire and consent form. The researcher continued this process until the finished 350 sample.

3.8.2 The researcher send questionnaires to all the sample groups and attached the letter of intent to allow the information in the survey. The documents explaining the respondents which include explanations of research objectives, variable's detail and how to answer a questionnaire, the confidentiality of information, requesting cooperation in answering queries and explain the protection of research rights. This questionnaire can provide information on a voluntary basis, not specific the name in the questionnaire. The data from the questionnaire had been confidential and didn't affect the performance of the samples.

When the sample group completed the questionnaire, the return was sent to the researcher by mail. However, after submitting the questionnaire by mail the researcher contacted the sample group via electronic mail to track the complete questionnaire or not (around 1 week, after sending mail). If not received, the researcher will have sent a new questionnaire. The period to collect data for 1 month in May-June 2019.

3.8.3 The researcher received the mail back and check the accuracy of the answer. After that completed the data and used statistic to analysis the data.

### 3.9 Analysis (Statistics)

Data were analyzed by SPSS program version 22 (Chulalongkorn university license).

#### Descriptive analysis

In the first step of the analysis, dependent and independent variables were described. Categorical data reported as number and percentage. Continuous data described by mean and standard deviation if data were normally distributed. If data was skewed, median and interquartile rank (IQR) had been reported.

#### Bivariate analysis

In this study, the dependent variable was treated as categorical data (Clinical and Non-Clinical insomnia). For independent variable also interm of categorical data, chi-square was performed. If the assumption of chi-square is not meet, Fisher exact test will be analyzed. For continuous independent data, in this study group all variables in this study as categorical data which used the median to classified it (equal or lower than the median, and higher than the median).

#### Multivariate analysis

After bivariate analysis, independent variable with p-value  $< 0.2$  will be selected for performing multivariate analysis. Binary logistic regression has been analyzed because the dependent variable was treated as the dichotomous outcome (Clinical and Non-Clinical insomnia). Statistical significant was considered at  $p < 0.05$ . Therefore, independent variables with  $p < 0.05$  in this step were considered as associated factors of insomnia.

### 3.10 Ethical Consideration

3.10.1 Informed consent of each participant was along with confidentiality and privacy, information related directly to them will be confidential. Result of this study was reported in the total picture. Any information which could be able to identify them did not appear in this report.

3.10.2 There was no risk/harm procedure with may cause ill effected to the physical, mental, social, economic, belief of participants in this study.

3.10.3 For the benefit of this study towards the participants resulted in many aspects of following:

1. The result of this study were showed the percentage of epidemiological public health workers in the ministry of public health in Thailand, who were suffering with insomnia, and this might turn to influence the workplace. If they would like to pay more concern about the living condition of the worker.
2. The result of this study can help the participants to assess their stress level during their work and insomnia state.
3. If any participants have any question or would like to obtain more information, the researcher can reach at all time. If the researcher has new information regarding risk/harm, participants were informed as soon as possible.

3.10.4 Chulalongkorn University Research Ethics Committee, COA No.065/62

### **3.11 Limitation**

1. This is a cross-sectional study which cannot refer to the causal relationship between job stress, social support, and insomnia. Therefore, further cohort study would be suggested to conduct to confirm the relationship
2. Insomnia is accessed by using a standard questionnaire which may lead to an information bias of result.
3. The self-reported questionnaire may induce recall bias from participants.



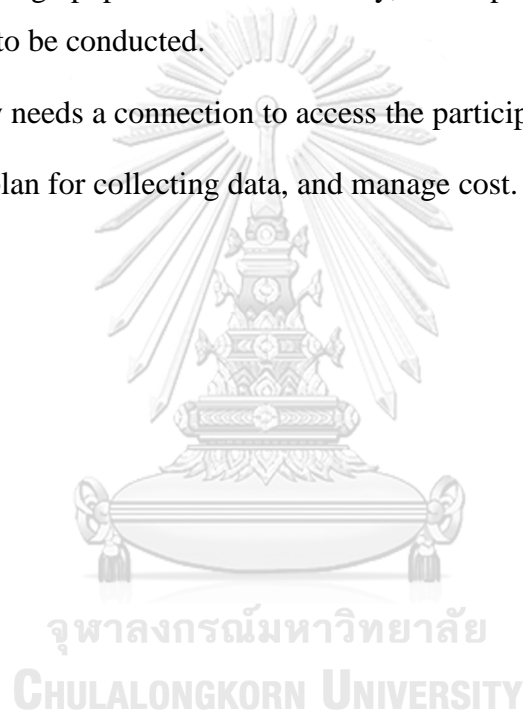
### 3.12 Expected Benefit & Application

The result of this study let to know the prevalence of insomnia among public health workers in Thailand and which factor is the cause of job stress that related to insomnia. From this part can force to supervisor or above to change or manage for the satisfaction, well-being of worker and efficiency of work.

### 3.13 Obstacles and strategies to solve the problem

There is a large population for this study, and separate around Thailand make an uncomfortable to be conducted.

- This study needs a connection to access the participants.
- Have to plan for collecting data, and manage cost.



## Chapter 4: Research Results

This chapter carries out the results of this cross-sectional study. It was conducted to describe Socio-demographic factors, work characteristics, stress level, social support level, and insomnia prevalence among public health worker in the ministry of public health, Thailand. From the calculation get 317 participants, but the researcher adds 10 % then sample size in this study were 350 participants. The data were collected by using a self-report questionnaire totally amount 325 participants after cleared data, however it still more than the minimum of sample size calculated. The results were presented in 6 parts as follows:

4.1 Sociodemographic factors in study population among public health workers in Thailand.

4.2 Working characteristics in study population among public health workers in Thailand.

4.3 Job stress, Social support level in study population among public health workers in Thailand.

4.4 Prevalence of Insomnia in study population among public health workers in Thailand.

4.5 The association between factors related and Insomnia among public health workers in Thailand.

4.6 Binary logistic regression factors related and Insomnia among public health workers in Thailand.

#### 4.1 Socio-demographic factors in the study population among public health workers in Thailand.

The results showed that 80.00% of samples were female, and 20.00% were male. There was 62.50% had age equal or lower than average, the average age was 35 years old (Mean = 35 years old, SD. = 9.50). Regarding education level, it was found that most of the samples were Bachelor's or equivalent level (67.70%) follow by Master's or equivalent level (24.90%). Furthermore, most samples were single (64.00%) and have no children (89.80%). Most of them had hobby as Entertainments (15.10%), Grown plants(6.50%), Exercise (5.50%), Social media(4.30%) and others by step. About work experience, it was found that the median was 7 years ( IQR= 4 – 15 years). The range of income/salary per month of samples between 10,000-90,000 Baht/Month ,The median of income was 20,000 Baht/month (IQR=18,000-32,300 Baht/month). Most of the samples had enough sufficiency of income, but no save (40.00%) and only 33.80% of them had enough sufficiency of income with saving. As shown in table 4.1.

**Table 1** Number of Sociodemographic factors in the study population among public health workers in Thailand.

Sociodemographic Variables	n	%
(N = 325)		
<b>Gender</b>		
Male	65	20.00
Female	260	80.00
<b>Age</b>		
Age equal or lower than mean ( $\leq 35$ years)	203	62.50
Age higher than mean ( $> 35$ years)	122	37.50
Mean = 35, SD = 9.50, Range = 23 - 60 years old		

---

**Education level**

Lower than Bachelor's degree	22	6.80
Bachelor's or equivalent level	220	67.70
Master's or equivalent level	81	24.90
Doctoral or equivalent level	2	0.62

**Marital status**

Single	208	64.00
Married	92	28.30
Separate/Divord/Widowed	25	7.70

**Have children's**

No	292	89.80
Yes	33	10.20

**Hobby**

None	116	35.70
Entertainments	49	15.10
Grown plants	21	6.50
Exercise	18	5.50
Social media	14	4.30
Others	107	32.90

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**Work experience**

Experience equal or lower than median ( $\leq 7$ years)	232	71.40
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Experience higher than median ( $> 7$ years)	93	28.60
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Median = 7 years , IQR = 4-15 years

**Income/month**

Equal or lower than median ( $\leq 20,000$ Baht)	167	51.40
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Higher than median ( $> 20,000$ Baht)	158	48.60
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Median = 20,000 Baht/month , IQR = 18,000-32,300 Baht/month

**Sufficiency of income**

Not enough	85	26.20
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Enough but no save	130	40.00
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Enough and have saving	110	33.80
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## 4.2 Working characteristics in study population among public health workers in Thailand.

This study used quota sampling technique for collecting samples by the workplace. More than half of samples work 35 – 40 hours per week (55.40%). Position at work 64.00% were Public servant, mainly were public health officers (60.60%) followed by nurse (19.70%). Mostly of them based on epidemiology group (95.69%). About traveling period, more than half had a period of traveling equal or lower than the median (53.20%) (Median = 30 minutes, IQR = 15 -60 minutes). As shown in table 4.2.

**Table 2** Number of Working characteristics in the study population among public health workers in Thailand.

Working characteristics Variables	n	%
(N = 325)		
<b>Workplace</b>		
ODPC 1	28	8.60
ODPC 2	21	6.50
ODPC 3	21	6.50
ODPC 4	12	3.70
ODPC 5	28	8.60
ODPC 6	36	11.10
ODPC 7	18	5.50
ODPC 8	19	5.80
ODPC 9	24	7.40

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ODPC 10	17	5.20
ODPC 11	36	11.10
ODPC 12	37	11.40
BOE	15	4.60
IUDC	13	4.00

#### **Hours of work/week**

35 – 40 hours per week	180	55.40
Higher than 40 hours per week	145	44.60

Mean = 46.13 Hours ,SD = 10.27, Rang = 35-80

#### **Position**

Public/civil servants	208	64.00
Government employee	44	13.50
Permanent employee	43	13.20
Temporary employee	30	9.20

#### **Position 2**

Doctor	5	1.50
Nurse	64	19.70
Public health officer	197	60.60
Others	59	18.20

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**Group of work**

Based on Epidemiology	311	95.69
Supporting groups	14	4.31

**Traveling period**

Period equal or lower than median ( $\leq 30$ minutes)	173	53.20
Period higher than median ( $> 30$ minutes)	152	46.80

Median = 30 minutes , IQR = 15 – 60 minutes

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### **4.3 Job stress, Social support level in study population among public health workers in Thailand.**

The result of job stress level measurement from the calculated (As detail in chapter 3) showed that, the score of job control between 34 – 72 scores (mean = 54.15, standard division = 7.00 scores), which can divided 192 public health workers had low level of job control (59.10%) and 133 public health workers had high level of job control (40.90%). For the score of psychological job demand between 18 – 72 scores (mean = 46.60, standard division = 8.10 scores), which can divided 175 public health workers had low level of psychological job demand (53.80%) and 150 public health workers had high level of psychological job demand (46.20%). Then the 24.30% of public health worker had high level of job stress, which combined from person who had low level of job control and high level of psychological job demand.

In part of the social support level measurement from the calculated (As detail in chapter 3) showed that, the score of social support between 18- 72 scores (mean = 50.97, standard division = 9.85 scores), which can divided 135 public health workers had low level of social support at work (41.50%) and 189 public health workers had high level of social support at work (58.20%) . When seek each section, it was found the score of supervisor support between 9 – 36 scores (mean = 24.21, standard division = 6.65 scores), which can divided 128 public health workers had low level of social support at work (39.40%) and 197 public health workers had high level of social support at work (60.60%). And for co-worker support found that, 95 public health workers had low level of co-worker support at work (29.20%) and 229 public health workers had high level of co-worker support at work (70.50%). As shown in table 4.3.

**Table 3** Number of Job stress, Social support level in study population among public health workers in Thailand.

Variables (N = 325)	n	%
<b>Job Stress Level</b>		
Low	246	75.70
High	79	24.30
* level of job stress devied by the combination between level of job control and level of pyschological job demand		
<b>Job Control</b>		
Low ( $\leq 54.15$ score)	192	59.10
High ( $> 54.15$ score)	133	40.90
Mean = 54.15 score ,SD = 7.00, Rang = 34 – 72 score		
<b>Psychological Job Demand</b>		
Low ( $\leq 46.60$ score)	175	53.80
High ( $> 46.60$ score)	150	46.20
Mean = 46.60 score ,SD = 8.10 , Rang = 18 – 72 score		
<b>Social support Level</b>		
Low ( $\leq 50.97$ score)	135	41.50
High ( $> 50.97$ score)	189	58.20
Mean = 50.97 score ,SD = 9.85 , Rang = 18 – 72 score		

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**Supervisor support**

Low ( $\leq 24.21$ score)	128	39.40
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High ( $> 24.21$ score)	197	60.60
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Mean = 24.21 score ,SD = 6.65 , Rang = 9 - 36 score

**Co-worker support**

Low ( $\leq 26.77$ score)	95	29.50
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High ( $> 26.77$ score)	229	70.50
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Mean = 26.77 score ,SD = 5.05 , Rang = 9 - 36 score

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#### 4.4 Prevalence of Insomnia in study population among public health workers in Thailand.

Table 4.4 the severity of insomnia among public health workers in Thailand was presented. According to this table, the total number of 325 public health workers who did response the self-questionnaire had score of the severity index between 0 – 27 score ( mean = 8.81 score ,standard deviation = 5.53). This study defined level of clinical insomnia into clinical and non-clinical insomnia ,was defined according to ISI (Insomnia Severity Index) which clinical insomnia had a total score more than 8 scores. Therefore found that 171 public health worker had clinical insomnia ,that mean the prevalence of clinical insomnia among public health worker was 52.60%.

**Table 4** Number of Insomnia level in study population among public health workers in Thailand.

Insomnia Level (N = 325)	n	%
Non-Clinical	154	47.40
Clinical	171	52.60
Mean = 8.81 score ,SD = 5.53 , Rang = 0 - 27 score		

#### **4.5 The association between factors related and Insomnia among public health workers in Thailand.**

Table 4.5 showed that, more than half of participants's respondents reported clinical insomnia (52.6%). The highest prevalence of insomnia by self-report in this study was observed for female group, age group lower than mean, single, no have children, had hobby, higher work experience, equale or lower income, and enough sufficeinccy income but no save. The association between socio-demographic factors, working characteristics and insomnia level among public health workers in Thailand by using the Chi-Square test at  $P\text{-value} = 0.05$ . There was no statistically significant association between dependent, insomnia level and independent variables, gender, age, marital status, hobby, work experience, and income/month.

However, There were 2 variables had an association with Insomnia in socio-demographic factors, an education level ( $P\text{-value}=0.03$ ) and sufficiency of income ( $P\text{-value}<0.01$ ). The proportion of education lower or equal to a Bachelor's degree and Master's degree or higher among the clinical level of insomnia war 69.59% and 31.41% by step. For in the proportion of sufficiency of income among insomnia group, 42.11% had enough and have saved, 39.77 % had enough but no save, and 18.12 % had not enough money.

In term of working characteristics, the traveling period just only one factor that association with Insomnia ( $P\text{-value}<0.01$ ). The proportion of traveling time higher than median and equal or lower than median among the clinical level of insomnia was 56.73 % and 43.27 % by step.

On the behalf on job stress and social support part found that, there are 2 factors which had an association with Insomnia at  $P\text{-value}=0.05$  were pyschological job demand level and supervisor support level ( $P\text{-value}<0.01$  and  $P\text{-value}=0.04$  by step). For the pyschological job demand level's proportion was 53.80 % had high level, and 46.20 % had low pyschological job demand level among the clinical of insomnia. While the supervisor support level's proportion was 55.56% had high level, and 44.44 % had low level of supervisor support among the clinical level of insomnia. In the order that, there were 4 independent variables (Job Control, Job Stress Level, Co-worker support

Level, and Social support Level) which have no statistically significant association between dependent, Insomnia level. As shown as table 4.6.

**Table 5** Association between Socio-demographics, Working characteristics, and Insomnia among public health workers in Thailand.

Sociodemographics	Insomnia Level			
	Non-	Clinical	Chi-	P-
	Clinical	Clinical	Square	value
	(n=154)	(n=171)		
	n (%)	n (%)		
<b>Gender</b>				
Male	31(20.13)	34(19.88)	0.003	0.96
Female	123(79.37)	137(80.12)		
<b>Age (mean = 35 years)</b>				
Equal or lower than mean	99(64.28)	104(60.82)		
( $\leq 35$ years)			0.42	0.52
Age higher than mean	55(35.72)	67(39.18)		
(> 35 years)				

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**Education level**

Lower or equal to Bachelor's degree	123(79.87)	119(69.59)	4.50	0.03*
Master's degree or higher	31(20.13)	52(31.41)		

**Marital status**

Single	99(64.28)	109(63.74)	0.64	0.73
Married	45(29.22)	47(27.48)		
Separate/Divord/Widowed	10(6.50)	15(8.78)		

**Have children**

no	142(92.20)	150(87.72)	1.79	0.18*
yes	12 (7.80)	21(12.28)		

**Hobby**

None	56(36.36)	60(35.09)	0.06	0.81
Yes	98(63.64)	111(64.91)		

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**Work experience**

Equal or lower than median	87(56.49)	82(47.95)		
( $\leq 7$ years)			2.37	0.22
Higher than median ( $>7$ years)	67(43.51)	89(52.05)		

**Income/month**

Equal or lower than median	80(51.95)	87(50.88)		
( $\leq 20,000$ Baht)			0.37	0.85
Higher than median	74(48.05)	84(49.12)		
( $> 20,000$ Baht)				

**Sufficiency of income**

Not enough	54(35.06)	31(18.12)	16.17	$<0.01^*$
Enough but no save	62(40.26)	68(39.77)		
Enough and have saving	38(24.68)	72(42.11)		

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<b>Working characteristics</b>	<b>n (%)</b>	<b>n (%)</b>	<b>Chi-Square</b>	<b>P-value</b>
<b>Hours of work/week</b>				
35 – 40 hours per week	86(55.84)	94(54.97)	0.03	0.87
Higher than 40 hours per week	74(44.16)	84(45.03)		
<b>Position</b>				
Public servant	96(62.34)	112(65.50)	0.35	0.55
Government employee	58(37.66)	59(34.50)		
<b>Traveling period</b>				
Equal or lower than median	97(62.99)	74(43.27)		
(≤ 30 minutes)			12.63	<0.01*
Period higher than median	57(37.01)	97(56.73)		
(> 30 minutes)				

\* P-value < 0.2

**Table 6** Association between Job stress, Social support, and Insomnia among public health workers in Thailand.

Characteristics	Insomnia Level		Chi-Square	P-value
	Non-	Clinical		
	Clinical	Clinical		
	(n=154)	(n=171)		
	n (%)	n (%)		
<b>Job Stress Level</b>				
Low	122(79.22)	124(72.51)	1.98	0.16
High	32(20.78)	47(27.49)		
<b>Job Control</b>				
Low	85(55.19)	107(62.57)	1.83	0.18
High	69(44.81)	64(37.43)		
<b>Psychological Job Demand</b>				
Low	96(62.34)	79(46.20)	8.49	<0.01*
High	58(37.66)	92(53.80)		

<b>Social support Level</b>				
Low	61(39.61)	74(43.27)	0.36	0.53
High	92(60.39)	97(56.73)		
<b>Supervisor support Level</b>				
Low	52(33.77)	76(44.44)	3.87	0.04*
High	95(66.23)	102(55.56)		
<b>Co-worker support Level</b>				
Low	43(27.92)	52(30.41)	0.21	0.65
High	110(72.08)	119(69.59)		

\* p-value < 0.2



#### **4.6 Binary logistic regression factors related and Insomnia among public health workers in Thailand.**

The binary logistic regression model was used to find out whether there were statistically significant relationships between the dependent variable and the independent variables which have p-value less than 0.2 in table 4.5 and 4.6. To use binary logistic regression model, the dependent variable Insomnia level must be in dichotomous outcome. The score of Insomnia was defined as non-clinical insomnia level when the score was less than or equal 8, and clinical insomnia level when the score was greater than 8.

Table 4.7 showed that, the binary logistic regression analysis of each independent variables associated with Insomnia. Eight variables which have p-value less than 0.2 (education, have children, the sufficiency of income, traveling period, stress level, control, psychological job demand, and supervisor support).

Education level maintained significant with Insomnia, as the educational level increased then the level of Insomnia will be increased. That means for workers who graduated Master's degree or higher increases 1.73-fold odds of having insomnia compare with lower education's level (OR=1.734, 95%CI = 1.04 – 2.89).

Sufficiency of income strongly significant associated with Insomnia, as Sufficiency of income, increased then the level of Insomnia will be increased. That means for workers who had enough sufficiency of income but no save increase 1.91-fold odds of having insomnia compare with not enough sufficiency of income (OR=1.91, 95%CI = 1.09 - 3.34). And workers who had enough sufficiency of income with save increase 3.30-fold odds of having insomnia compare with not enough sufficiency of income (OR=3.30, 95%CI = 1.82- 5.97).

Traveling period maintained significant with Insomnia, as traveling period increased then the level of Insomnia will be increased. That means for workers who take a longer period of traveling increase 2.24 -fold odds of having insomnia compare with an equal or lower traveling period (OR=2.24; 95%CI = 1.43 – 3.50).

Psychological job demands also strongly significant associated with Insomnia, as Physical job demand level increased then the level of Insomnia will be increased.

That means for workers who had high level of Physical job demand increase 1.99 -fold odds of having insomnia compare with low level of Physical job demand (OR=1.93, 95%CI = 1.24 – 3.00).

Supervisor support was negatively associated with Insomnia, which maintained significant, as Supervisor support level increased then the level of Insomnia decreased. That means for workers who had a high level of supervisor support decreased 0.64 - fold odds of having insomnia compare with who had a low level of supervisor support (OR=0.64, 95%CI = 0.41 – 0.99).

Table 4.8 showed that, the binary logistic regression analysis of the relationship between selected factors and Insomnia among public health workers in Thailand. **Five** variables from table 4.7 were selected to analyzed (education, the sufficiency of income, traveling period, psychological job demand, and supervisor support). After controlling other factor found the adjusted odds ratio following...

Education level maintained significant with Insomnia after control (1sufficiency of income, (2) traveling period, (3) physiological job demand, and (4)supervisor support. For workers who graduated Master's degree or higher increases 2.08-fold odds of having insomnia compare with lower education's level (AOR=2.08, 95%CI = 1.17 - 3.65).

Sufficiency of income strongly significant associated with Insomnia after control (1)education, (2) traveling period, (3) physiological job demand, and (4)supervisor support. For workers who had enough sufficiency of income but no save increase 2.20-fold odds of having insomnia compare with not enough sufficiency of income (AOR=2.20, 95%CI = 1.09 – 3.34). And workers who had enough sufficiency of income with saving increase 3.99-fold odds of having insomnia compare with not enough sufficiency of income (AOR=3.99, 95%CI = 1.83 – 5.97).

Traveling period maintained significant with Insomnia after control (1)education, (2)sufficiency of income, (3) physiological job demand, and (4)supervisor support. For workers who take a longer period of traveling increase 2.73-fold odds of having insomnia compare with equal or lower traveling period (AOR=2.73; 95%CI = 1.56- 4.79).

Psychological job demand also strongly significantly associated with Insomnia after control (1)education, (2)sufficiency of income, (3) Traveling period, and (4)supervisor support. For workers who had a high level of psychological job demand increase 1.76 -fold odds of having insomnia compare with a low level of Physical job demand (AOR=1.76, 95%CI = 1.09 - 2.83).

However, Supervisor support was no significant statistically with Insomnia, after control other variables (education, the sufficiency of income, traveling period, and psychological job demand).

**Table 7** Binary logistic regression factors related and Insomnia among public health workers in Thailand.

Variables**	Odd ratio	95% C.I.	
		Lower	Upper
Education level			
Lower or equal to Bachelor's degree	1		
Master’s degree or higher	1.73*	1.04	2.89
Have children			
No	1		
Yes	1.66	0.79	3.49
Sufficiency of income			
Not enough	1		
Enough but no save	1.91*	1.09	3.34
Enough and have saving	3.30*	1.83	5.97
Traveling period			
Period equal or lower than median	1		
Period higher than median	2.24*	1.43	3.50

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**Job Control Level**

Low	1		
High	0.74	0.47	1.15

**Psychological job demand Level**

Low			
High	1.99*	1.24	3.00

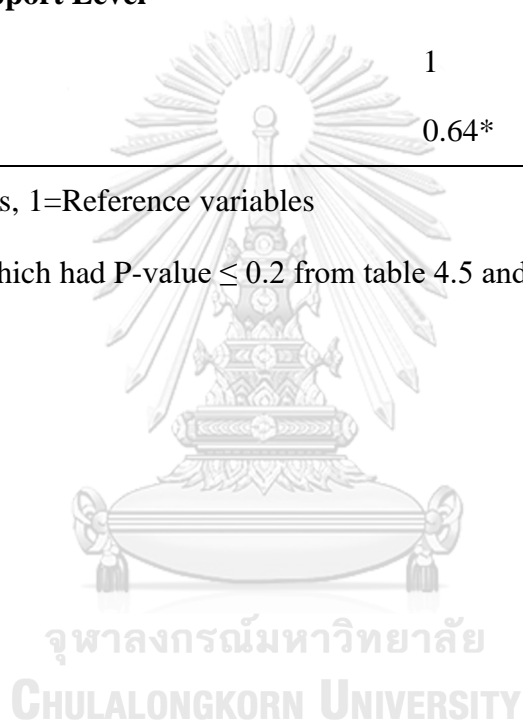
**Supervisor support Level**

Low	1		
High	0.64*	0.41	0.99

---

\*Significant factors, 1=Reference variables

\*\*The variables which had P-value  $\leq 0.2$  from table 4.5 and 4.6



**Table 8** Binary logistic regression for the relationship between selected factors and Insomnia among public health workers in Thailand.

Variables*	B	S.E.	AOR	95% C.I.	
				Lower	Upper
<b>Education level</b>					
Lower or equal to Bachelor's degree	1				
Master's degree or higher*	0.73	0.29	2.08	1.17	3.65
<b>Sufficiency of income</b>					
Not enough	1				
Enough but no save*	0.65	1.09	2.20	1.09	3.34
Enough and have saving*	1.19	1.83	3.99	1.83	5.97
<b>Traveling period</b>					
Period equal or lower than median	1				
Period higher than median*	0.70	0.24	2.73	1.56	4.79
<b>Psychological job demand Level</b>					
Low	1				
High*	0.56	0.24	1.76	1.09	2.83
<b>Supervisor support Level</b>					
Low	1				



High	-0.17	0.25	0.85	0.52	1.38
<b>Constant</b>	-1.31	.37	0.27		

\* P-value < 0.05



## **Chapter 5: Discussion, Limitation, Conclusion, and Recommendation**

### **5.1 Discussion**

The aimed of this study was to the accessed prevalence of insomnia, and to accessed associations between job stress, social support, and insomnia among Public health workers in Thailand. The self-report questionnaires were used to conducted Sociodemographic factors, work characteristics, stress level, social support level and insomnia among participants in 14 organization under the ministry of Public Health, Thailand. The data was collected between May to June 2019, and the number of completed questionnaires returned and cleared was 325 (92.85%) participants. The results were discussed as follows:

#### **Part1: Socio-demographic Factors**

In this part of the study consists of 10 variables (gender, age, education, marital status, have children, work experience, income, the sufficiency of income, and hobby). Almost half 52.60 % of respondents had reported clinical insomnia. The highest prevalence of insomnia by self-report in this study was observed for female group (80.12 %), age group lower than mean (60.82%), single (63.74%), no have children(87.72%), had hobby (64.91%), higher work experience (52.05%), equal or lower income (50.88%), and enough sufficiency income but with saving (4%).

Notably, there were only 2 variables had an association with insomnia in socio-demographic factors as following...

#### Education level

From this variable, we want to see the differences in educational level between lower or equal to Bachelor's degree and Master's degree or higher, the proportion of education lower or equal to Bachelor's degree and Master's degree or higher among the clinical level of insomnia was 69.59 % and 30.41 % by step. After doing the calculation by chi-square, we found that, there was statistically significant association between education level and insomnia among public health workers in Thailand (P-value=0.03).

This result is supported by the studied in America by Michael A. Grandner (Grandner et al., 2010) on *Sleep disturbance is associated with cardiovascular and metabolic disorders*. They found that, *There was an inverse relationship between Sleep Complains and education level, with the lowest education level predicting the highest Sleep Complains in both gender groups.*

And also similar to the studied at the University of Memphis, America by Les A Gellis (Gellis et al., 2005) on *Socioeconomic Status and Insomnia*. They found that, *There were significantly associated between educational level and insomnia even after controlled for ethnicity, gender, and age. (OR. =0.87, 95%CI = 0.81–0.94).*

However it quite different from our result by using binary logistic regression, which for workers who graduated Master's degree or higher increases 1.73-fold odds of having insomnia compare with lower education's level (OR=1.734, 95%CI = 1.04 – 2.89). Maybe this because the different burden of job in the organizations. When person graduated high level of education, they will be expected from supervisor and others. Many organization offer more salary to high educationa , absolutely they anticipate for high quality of work. All can be the result that public health workers who had high education level can got stress, and had change for insomnia higher than lower education level .

#### Sufficiency of income

From this variable, we want to see the differences in the sufficiency of income between not sufficiency income, sufficiency income with no save, and sufficiency income with saving. The proportion of not sufficiency income, sufficiency income with no save, and sufficiency income with saving among the clinical level of insomnia were 18.13 %, 39.76%, and 42.17 % by step. After doing calculation by chi-square, we found that, there was a strongly statistically significant association between the sufficiency of income and insomnia among public health workers in Thailand (P-value< 0.01).

This result is supported by the studied in Thailand by Puangsoi Worakul (Puangsoi Worakul, 2006) on *Risk Factors of Insomnia Among Fight Attendants*. They found that, *Inadequate(not enough sufficiency of income) was risk factors of insomnia*

( $OR = 2.22$ ,  $95\%CI = 1.25 - 3.94$  ) among flight attendants in Thai Airways international public company.

However our result by using binary logistic regression found that, workers who had enough sufficiency of income without save and had enough sufficiency of income with saving increases 1.91-fold odds and 3.30-fold odds of having insomnia compare with not enough sufficiency of income ( $AOR_{\text{saving}} = 1.91$ ,  $95\%CI = 1.09 - 3.34$  and  $AOR_{\text{had saving}} = 3.30$ ,  $95\%CI = 1.83 - 5.97$ ). This maybe the person who had enough money because they work hard or high responsible on work, someone had work more that one job that make them have no time to take a rest or relax. And Also due to different expectations of a person, such as risk person they always think how can earn more money which can cause stress and related to insomnia.

## **Part2: Work characteristics**

In this part of the study consists of 4 variables (workplace, Position, hours of work, and traveling period). The highest prevalence of insomnia by self-report in this study was observed for public servants (65.50 %), who work more that 40 hours per week (54%), and period of traveling higher than 30 minutes per day (56.73%).

Notably, there was only 1 variable had an association with insomnia in socio-demographic factors ...

### Travelling period

This study showed that there was a statistically significant association between Travelling period and insomnia among public health workers in Thailand ( $P\text{-value} < 0.01$ ). Workers who take a longer period of traveling increase 2.24 -fold odds of having insomnia ( $OR = 2.24$ ;  $95\%CI = 1.43 - 3.50$ ).

This result is supported by the study of Li Ping Wong (Li Ping Wong, Nasrin Aghamohammadi, & Zhao, 2018) on *Commuting Time and Sleep Study* found that, *Commute times have risen fairly steadily in the past 25 years. Mimicking that rise are both longer work hours, and higher levels of sleep deprivation.* the most common psychological impact associated with during the daily commute/ transportation was stress (13.0%), followed by *insomnia* (5.0%) and feeling moody and anxious (3.6%).

This maybe the person who had a long time of traveling period they can exposure to air pollution more than the person who had short time for traveling, which can make they burnout but lack time to take a rest. And Also a combination of the traveling time, rush traffic hours and supervisor' expects us to arrive at work early can cause stress or anxiety and related to insomnia.

### **Part3: Job stress**

In this part of the study consists of 2 variables (job control and psychological job demand). Form the Karasek job content questionnaire(Karasek, 1979), the high level of job stress combined with low job control and high level of psychological job demand. This study found that 71.34% of participants among reported clinical insomnia had a low level of job stress. Nevertheless, the proportion of low job control and high psychological job demand among the clinical level of insomnia were 37.43% and 53.80% by step. And we also found, the association between and psychological job demand and insomnia as following...

#### Psychological job demand

After doing calculation by chi-square, we found that, there was a strongly statistically significant association between psychological job demand and insomnia among public health workers in Thailand (P-value <0.01).

This result is supported by the studied in China by Bing Yang (Yang et al., 2018) on *Association between insomnia and job stress: a meta-analysis*. They found that, *High job stress was associated with a greater risk of suffering from insomnia (random OR = 1.73, 95% CI 1.46-2.05) and higher psychological job demand was correlated to a relatively greater risk of insomnia (random OR = 1.35, 95% CI = 1.20-1.51).*

As well as the studied in Korea by Hwan-Cheol Kim (H.-C. Kim et al., 2011) on *Association between job stress and insomnia in Korea worker*. They suggested that, *job stress is a possible risk factor for insomnia and that particularly discomfort in occupational climate and inadequate social support have more strong relation to insomnia in Korea (high job demand: OR: 1.30, 95% CI: 1.14-1.47).*

Those result form previous study convinced our studied, our result by using binary logistic regression found that, workers had high level of Psychological job demand increase odds of having insomnia (OR=1.99, 95%CI = 1.24 – 3.01). In workers who had high pyschological job demand (especially, incase with low job control) they will have job stress. This represents a burnout risk factor of work that easy related to mental health and sleep disorders. Nowaday public health worker have many additional workloads. Not only responsible for the disease but also need to take action at various accidents and disasters as well. Especially the surveillance of road traffic injury in long weeken or festivals. This expectation and additional burden from the above, it can increasing pyschological demand. And as we know level of job stress will increase when pyschological demand increased .Some study said that, when job stress increased the cortisol in body system also increase and then crotisol will related to sleep disorders.

#### **Part4: Social support**

In this part of the study consists of 2 variables (Supervisor support and co-worker support). Form the Karasek job content questionnaire(Karasek, 1979). This study found that 56.70% of participants among reported clinical insomnia had a high level of social support and 43.30 % had a low level of social support. Nevertheless, the proportion of low supervisor support and low co-worker support among the clinical level of insomnia were 44.45% and 30.41% by step. And we also found, the association between and supervisor support and insomnia as following...

##### Supervisor support

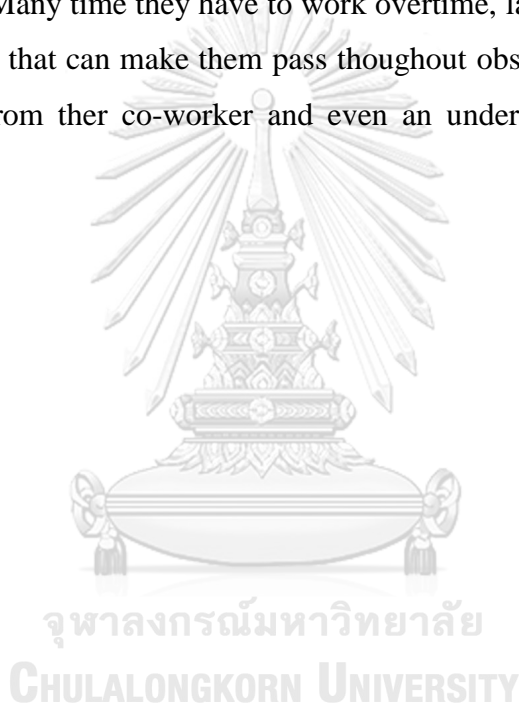
After doing calculation by chi-square, we found that, there was a statistically significant association between supervisor support and insomnia among public health workers in Thailand (P-value =0.04).

This result is supported by the studied in Korea by Soohyun Kim (S. Kim & Suh, 2019) on *Social Support as a Mediator Between Insomnia and Depression in Female Undergraduate Students* found that, Insomnia severity was significantly associated with low levels of social support (B = -1.04, SE = .27, p < .001).

As well as studied in China by Bing Yang (Yang et al., 2018) on *Association between insomnia and job stress: a meta-analysis*. They found that, a pooled odds ratio

of 1.67 (fixed, 95% CI 1.11–2.52) was calculated in low social support. And the studied of Nakata, Akinori found that lower social support at work was significantly associated with a greater risk of insomnia than the higher social support (adjusted OR 2.5).

Those result from the previous study convinced our studied, our result by using binary logistic regression found that, worker who had high level of supervisor support decreased 0.63 -fold odds of having insomnia (OR=0.63, 95% CI = 0.41 – 0.99). Public health workers are one of occupational which work under high pressure ,both from time limited and disease. Their work have high risk to get disease especially when work on infection control. Many time they have to work overtime, lack of time to be with their family. One things that can make them pass throughout obstacles was team work ,that mean supported from ther co-worker and even an understood and supported from supervisor.



## 5.2 Conclusion

### Research Hypothesis :

*Hypothesis 1: “ There is an association between job stress and insomnia among Public health workers in Thailand.”*

This hypothesis was accepted. There was an association between a component of job stress and insomnia, as shown in table 4.6 at P-value=0.05. The job Psychological demand level had a statistically significant association with insomnia (P-value<0.01 ). More than 28.30% of samples had a high level of job Psychological demand, and 24.30 % had a low level of Psychological job demand among the clinical level of insomnia.

In addition, after used binary logistic regression found Psychological job demand also strongly significant associated with Insomnia, as Psychological job demand level increased then the level of Insomnia will be increased. That means for workers who had a high level of Psychological job demand increase 1.93 -fold odds of having insomnia compare with a low level of Psychological job demand (OR=1.93, 95%CI = 1.24 – 3.01) as shown at table 4.7.

*Hypothesis 2: There is an association between social support and insomnia among Public health workers in Thailand.*

This hypothesis was accepted. There was an association between a component of social support and insomnia, as shown in table 4.6 at P-value=0.05. The supervisor support had a statistically significant association with insomnia (P-value=0.04). the supervisor support level's proportion was 29.20% had a high level, and 23.40 % had a low level of supervisor support among the clinical level of insomnia.

In addition, after used binary logistic regression found Supervisor support was negatively associated with Insomnia, which maintained significant, as Supervisor support level increased then the level of Insomnia decreased. That means for workers who had a high level of supervisor support decreased 0.63 -fold odds of having insomnia compare with who had a low level of supervisor support (OR=0.63, 95%CI = 0.41 – 0.99) as shown at table 4.7. However, Supervisor support was no significant



statistically with Insomnia, after control other variables (education, the sufficiency of income, traveling period and physical job demand).

### **Overall :**

An association between job stress, social support, and insomnia among public health workers in Thailand were tested by Chi-square and Binary logistic regression analysis. In this study, Insomnia was divided into two categories, which were non-clinical insomnia and clinical insomnia. It was found that the Logistic Regression Model Predicting Insomnia, there are only 5 factors; education level, the sufficiency of income, traveling period, physical job demand and supervisor support can related to insomnia among public health workers in Thailand.

### **5.3 Limitation**

1. This was a cross-sectional study which cannot refer to the causal relationship between job stress, social support, and insomnia. Therefore, further cohort study would be suggested to conduct to confirm the relationship
2. Insomnia was accessed by using a standard questionnaire which may lead to an information bias of result.
3. The self-reported questionnaire may induce recall bias from participants.
4. This study did not include a physical examination or disease history and personal's habits of participants, that may affect insomnia (e.g., coffee and alcohol consumption) were not determined.

## 5.4 Recommendation

1. The policy recommendation based on the result of this study, let us know the prevalence of insomnia among public health workers in Thailand and which factor is the cause of job stress that related to insomnia.

1.1 The level of supervisor support: A supervisor or above should pay more attention to underlying, what're they need? , what're they do better? to change or manage for the satisfaction, well-being of worker and efficiency of work.

1.2 The psychological job demand: Public health workers had high psychological job demand. So the executive should assign clear tasks to the worker.

1.3 Has a counselor or activity at the workplace, or develop more efficient about work patterns which make the workers have more satisfaction at work and also can reduce the demand for work.

2. The further research recommendation from the limitation of this study, as follows

2.1 For further study should study the causal relationship between job stress, social support, and insomnia, the researcher can choose cohort study to conduct and confirm the relationship.

2.2 For further study can assess insomnia level by experts medical test which can reduce an information bias of result better than a standard questionnaire.

2.3 The further study should focus on other factors that can influence insomnia or sleep disorder, such as drink coffee, alcohol before bed, the home place has noise in bedtime, chronic disease, etc.

3. The Individual recommendation based on the result of this study, let us know the high prevalence of insomnia among public health workers ,many factors that can related to insomnia ;education level, sufficiency of income , travelling period . All of this depend on individual which difficult to change but you can manage other factors such as stress or factors related to stress by your self for example take your days off to travel or join with your family.

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## APPENDIXES



จุฬาลงกรณ์มหาวิทยาลัย  
**CHULALONGKORN UNIVERSITY**



## APPENDIX A : Certificate of Approval-Thai

AF 01-12



คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย  
254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330  
โทรศัพท์/โทรสาร: 0-2218-3202, 0-2218-3409 E-mail: eccu@chula.ac.th

COA No. 126/2562

### ใบรับรองโครงการวิจัย

โครงการวิจัยที่ 065.1/62 : ศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน การสนับสนุนทางสังคม และภาวะนอนไม่หลับในผู้ปฏิบัติงานสาธารณสุขในประเทศไทย

ผู้วิจัยหลัก : นางสาวกนกรัตน์ โพธิ์พลย์

หน่วยงาน : วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ได้พิจารณาโดยใช้หลัก ของ Belmont Report 1979, Declaration of Helsinki 2013, Council for International Organizations of Medical Sciences (CIOM) 2016, มาตรฐานคณะกรรมการจริยธรรมการวิจัยในคน (มคจค.) 2556, และนโยบายแห่งชาติและแนวทางปฏิบัติการวิจัยในมนุษย์ 2558 อนุมัติให้ดำเนินการศึกษาวิจัยเรื่องดังกล่าวได้

ลงนาม .....  
(รองศาสตราจารย์ นายแพทย์ปริดา ทักสินประดิษฐ์)  
ประธาน

ลงนาม .....  
(ผู้ช่วยศาสตราจารย์ ดร.นันท์ ชัยชนะวงศาโรจน์)  
กรรมการและเลขานุการ

วันที่รับรอง : 13 พฤษภาคม 2562

วันหมดอายุ : 12 พฤษภาคม 2563

เอกสารที่คณะกรรมการรับรอง

- 1) โครงการวิจัย
- 2) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
- 3) ผู้วิจัย
- 4) แบบสอบถาม



เงื่อนไข

1. ข้าพเจ้ารับทราบว่าเป็นการผิดจริยธรรม หากดำเนินการเก็บข้อมูลการวิจัยก่อนได้รับการอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยฯ
2. หากใบรับรองโครงการวิจัยหมดอายุ การดำเนินการวิจัยต้องยุติ เมื่อต้องการต่ออายุต้องขออนุมัติใหม่ล่วงหน้าไม่น้อยกว่า 1 เดือน พร้อมส่งรายงานความก้าวหน้าการวิจัย
3. ต้องดำเนินการวิจัยตามที่ระบุไว้ในโครงการวิจัยอย่างเคร่งครัด
4. ใช้เอกสารข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และเอกสารเชิญเข้าร่วมวิจัย (ถ้ามี) เฉพาะที่ประทับตราคณะกรรมการเท่านั้น
5. หากเกิดเหตุการณ์ไม่พึงประสงค์ร้ายแรงในสถานที่เก็บข้อมูลที่ขออนุมัติจากคณะกรรมการ ต้องรายงานคณะกรรมการภายใน 5 วันทำการ
6. หากมีการเปลี่ยนแปลงการดำเนินการวิจัย ให้ส่งคณะกรรมการพิจารณาจริยธรรมการวิจัยก่อนดำเนินการ
7. โครงการวิจัยไม่เกิน 1 ปี ส่งแบบรายงานสิ้นสุดโครงการวิจัย (AF 03-12) และบทคัดย่อผลการวิจัยภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น สำหรับโครงการวิจัยที่เป็นวิทยานิพนธ์ให้ส่งบทคัดย่อผลการวิจัย ภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น

## APPENDIX B : Certificate of Approval-English

AF 04-07

ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย

ชื่อโครงการวิจัย ศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน การสนับสนุนทางสังคม และ  
ภาวะนอนไม่หลับในผู้ปฏิบัติงานสาธารณสุข ในประเทศไทย  
(An association between Job stress, Social support and Insomnia among Public  
Health workers in Thailand)

ชื่อผู้วิจัย นางสาวกนกกรรณ์ ไพฑูรย์

ตำแหน่ง นิสิตระดับมหาบัณฑิต วิทยาลัยวิทยาศาสตร์สาธารณสุข

สถานที่ติดต่อผู้วิจัย (ที่ทำงาน) สถาบันป้องกันควบคุมโรคเขตเมือง 24/56 หมู่ 3 ถนนพหลโยธิน  
แขวงอนุสาวรีย์ เขตบางเขน กรุงเทพฯ 10220  
โทรศัพท์ (ที่ทำงาน) 0 2521 0943-5 ต่อ ...405,406.....  
(ที่บ้าน) 481/4 ถ.พหลโยธิน 1 แขวงสามเสนใน เขตพญาไท  
กรุงเทพมหานคร 10400.....  
โทรศัพท์มือถือ .....090-2202478..... E-mail : tornado.nnt@gmail.com

1. ขอเรียนเชิญท่านเข้าร่วมในการวิจัยก่อนที่ท่านจะตัดสินใจเข้าร่วมในการวิจัย มีความจำเป็นที่  
ท่านควรทำความเข้าใจว่างานวิจัยชิ้นนี้ จัดทำขึ้นเพื่อศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน และ  
การสนับสนุนทางสังคมที่ส่งผลต่อภาวะนอนไม่หลับในผู้ปฏิบัติงานด้านสาธารณสุข ในประเทศไทย ทั้งนี้  
กรุณาใช้เวลาในการอ่านข้อมูลต่อไปนี้อย่างละเอียดรอบคอบ และสอบถามข้อมูลเพิ่มเติม หรือข้อมูลที่ไม่  
ชัดเจนได้ตลอดเวลา

2. โครงการนี้มีวัตถุประสงค์เพื่อศึกษาความชุกของภาวะนอนไม่หลับในกลุ่มผู้ปฏิบัติงานด้าน  
สาธารณสุข และเพื่อศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน และการสนับสนุนทางสังคม กับ  
ภาวะการนอนไม่หลับในกลุ่มผู้ปฏิบัติงานด้านสาธารณสุข

3. รายละเอียดของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย  
การศึกษานี้มีจุดประสงค์เพื่อศึกษาในผู้ปฏิบัติงานด้านสาธารณสุข ภายใต้กระทรวงสาธารณสุข  
ประเทศไทย ซึ่งหมายรวมถึง แพทย์ พยาบาล นักวิชาการสาธารณสุข และอื่นๆที่เกี่ยวข้อง เป็นผู้  
ปฏิบัติงานไม่น้อยกว่า 35 ชั่วโมงต่อสัปดาห์ โดยในที่นี้ไม่รวมถึงผู้บริหารของแต่ละหน่วยงาน และผู้ที่มี  
ประวัติเข้ารับการรักษาด้านจิตเวช ทั้งนี้ต้องมีความยินดีในการให้ข้อมูลสำหรับการวิจัยในครั้งนี้ จำนวน  
350 คน

4. ในการวิจัยครั้งนี้มีผู้วิจัย ร่วมกับคณะผู้ช่วยวิจัย โดยจะทำการเก็บรวบรวมข้อมูลโดยใช้  
แบบสอบถาม แบ่งเป็น 4 ส่วนคือ (1)แบบสอบถามข้อมูลทั่วไปและข้อมูลในการปฏิบัติงาน จำนวน 14 ข้อ  
, (2)แบบประเมินความเครียดจากการทำงาน จำนวน 22 ข้อ , (3)แบบสอบถามแรงสนับสนุนทางสังคม  
จำนวน 8 ข้อ และ (4) แบบประเมินอาการนอนไม่หลับ จำนวน 7 ข้อ รวมทั้งสิ้น 51 ข้อ ภายในระยะเวลา 1  
ชั่วโมง



เลขที่โครงการวิจัย..... 065-1/62  
วันที่รับรอง..... 13 พ.ค. 2562  
วันหมดอายุ..... 12 พ.ค. 2563

**APPENDIX C : Participants Information Sheet**





AF 02-12

The Research Ethics Review Committee for Research Involving Human Research  
Participants, Health Sciences Group, Chulalongkorn University  
Jamjuree 1 Building, 2nd Floor, Phyathai Rd., Patumwan district, Bangkok 10330, Thailand,  
Tel/Fax: 0-2218-3202, 0-2218-3409 E-mail: [eccu@chula.ac.th](mailto:eccu@chula.ac.th)

COA No. 126/2019


### Certificate of Approval

Study Title No. 065.1/62 : AN ASSOCIATION BETWEEN JOB STRESS, SOCIAL SUPPORT, AND  
INSOMNIA AMONG PUBLIC HEALTH WORKERS IN THAILAND

Principal Investigator : MISS KANOKRAT PAITOO

Place of Proposed Study/Institution : College of Public Health Sciences,  
Chulalongkorn University

The Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University, Thailand, has approved constituted in accordance with Belmont Report 1979, Declaration of Helsinki 1964, Council for International Organizations of Medical Sciences (CIOMS) 2002, Standards of Research Ethics Committee (SREC) 2013, and National Policy and guidelines for Human Research 2015.

Signature:   
(Associate Prof. Prida Tasanapradit, M.D.)  
Chairman

Signature:   
(Assistant Prof. Nuntaree Chaichanawongsaroj, Ph.D.)  
Secretary

Date of Approval : 13 May 2019

Approval Expire date : 12 May 2020

#### The approval documents including;

1) Research proposal

2) Participant Information Sheet and Informed Consent Form

3) Researcher

4) Questionnaire



The approved investigator must comply with the following conditions:

1. The research/project activities must end on the approval expired date of the Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University (RECCU). In case the research/project is unable to complete within that date, the project extension can be applied one month prior to the RECCU approval expired date.
2. Strictly conduct the research/project activities as written in the proposal.
3. Using only the documents that bearing the RECCU's seal of approval with the subjects/volunteers (including subject information sheet, consent form, invitation letter for project/research participation (if available)).
4. Report to the RECCU for any serious adverse events within 5 working days
5. Report to the RECCU for any change of the research/project activities prior to conduct the activities.
6. Final report (AF 03-12) and abstract is required for a one year (or less) research/project and report within 30 days after the completion of the research/project. For thesis, abstract is required and report within 30 days after the completion of the research/project.
7. Annual progress report is needed for a two- year (or more) research/project and submit the progress report before the expire date of certificate. After the completion of the research/project processes as No. 6.

## APPENDIX C : Participants Information Sheet (con.)

AF 04-07

โดยจะดำเนินการเก็บแบบสอบถามในหน่วยงานภายใต้กระทรวงสาธารณสุข จำนวน 14 แห่ง ได้แก่ สถาบันป้องกันควบคุมโรคที่ 1 – 12 (จังหวัดเชียงใหม่, จังหวัดพิษณุโลก, จังหวัดนครสวรรค์, จังหวัดสระบุรี, จังหวัดราชบุรี, จังหวัดชลบุรี, จังหวัดขอนแก่น, จังหวัดอุดรธานี, จังหวัดนครราชสีมา, จังหวัดอุบลราชธานี, จังหวัดนครศรีธรรมราช และจังหวัดสงขลา), สถาบันป้องกันควบคุมโรคเขตเมือง และสำนักโรคบาติวิทยา ระหว่างเดือนพฤษภาคม ถึง มิถุนายน พ.ศ. 2562 โดยผู้เข้าร่วมวิจัยสามารถส่งแบบสอบถามกลับมาได้ทางไปรษณีย์ หรือสแกนแล้วส่งกลับทางไปรษณีย์อิเล็กทรอนิกส์ ตามที่อยู่ที่แจ้งไว้ด้านบน

5. กระบวนการให้ข้อมูลแก่กลุ่มประชากร ผู้ร่วมวิจัยโดยผู้วิจัย ในที่นี้ผู้วิจัยจะส่งแบบสอบถามแก่ผู้เข้าร่วมวิจัยรวมถึงจดหมายขออนุญาตเก็บข้อมูล โดยในจดหมายจะอธิบายวัตถุประสงค์ของการวิจัย, รายละเอียดของตัวแปรแต่ละตัวรวมถึงวิธีการตอบแบบสอบถาม หากผู้ร่วมวิจัยท่านใดไม่เข้าใจในส่วนหนึ่งของแบบสอบถามหรืองานวิจัย สามารถติดต่อผู้วิจัยได้ตลอดการศึกษา

6. หากผู้ร่วมวิจัยตอบแบบสอบถามแล้วพบว่า ผู้ร่วมวิจัยน่าจะมีปัญหาด้านภาวะการนอนไม่หลับ อันเนื่องมาจากความเครียดจากการทำงานหรือเหตุปัจจัยอื่นๆนั้น ผู้วิจัยขอแนะนำให้ท่านพบแพทย์ หรือนักจิตวิทยาเพื่อดำเนินการรักษาต่อไป

7. การเข้าร่วมในการวิจัยครั้งนี้ไม่มีอันตรายหรือความเสี่ยงใดๆ ทุกข้อมูลในการวิจัยครั้งนี้จะไม่มีการระบุตัวตนของผู้ให้ข้อมูล ไม่สามารถที่จะสืบหาความเชื่อมโยงย้อนหลังได้ โดยผู้วิจัยจะเก็บข้อมูลทุกอย่างเป็นความลับตลอดการศึกษาวิจัย และจะทำลายเอกสารทั้งหมดที่เกี่ยวข้องกับผู้เข้าร่วมวิจัยโดยการเผาทำลายหลังจากสำเร็จการศึกษาวิจัย เพื่อป้องกันประเด็นความเป็นส่วนตัวของผู้เข้าร่วมวิจัย ทั้งนี้หากผู้เข้าร่วมวิจัยไม่สามารถตอบแบบสอบถามหรือต้องการออกจากการมีส่วนร่วมในการวิจัยครั้งนี้สามารถทำได้โดยไม่มีผลกระทบใดๆทั้งสิ้น

8. การศึกษาในครั้งนี้ไม่มีประโยชน์โดยตรงต่อตัวผู้เข้าร่วมวิจัย แต่ทำให้ทราบถึงสถานการณ์โดยรวมของความเครียดจากการทำงาน การสนับสนุนทางจากหัวหน้างานและผู้ร่วมงาน รวมทั้งความสัมพันธ์ระหว่างปัจจัยดังกล่าวข้างต้นกับภาวะการนอนไม่หลับในกลุ่มผู้ปฏิบัติงานด้านสาธารณสุข เพื่อนำไปเป็นข้อมูลในการปรับปรุง หรือจัดการรูปแบบในการปฏิบัติงานเพื่อลดความเครียดและส่งเสริมให้เกิดความสุขในการปฏิบัติงาน และเพื่อเพิ่มประสิทธิภาพในการทำงานต่อไป

9. การเข้าร่วมตอบแบบสอบถามของผู้เข้าร่วมวิจัย เป็นไปด้วยพื้นฐานของการสมัครใจ ทั้งนี้จากที่กล่าวมาข้างต้น หากผู้เข้าร่วมวิจัยการเข้าร่วมในการวิจัยต้องการที่จะปฏิเสธหรือออกจากการวิจัยสามารถทำได้ในทุกกรณี โดยไม่มีผลกระทบแต่ประการใดต่อตัวผู้เข้าร่วม

10. หลังจากเสร็จสิ้นการตอบคำถาม ผู้วิจัยจะมอบของที่ระลึกของหอมโรมาแก่ผู้ร่วมวิจัย เพื่อเป็นการขอบคุณสำหรับการเสียสละเวลาในการตอบแบบสอบถามในครั้งนี้

11. หากผู้ร่วมวิจัยมีข้อสงสัยเกี่ยวกับรายละเอียดแบบสอบถามหรือรูปแบบการวิจัย สามารถสอบถามเพิ่มเติมได้ที่นางสาวกนกรัตน์ ไพฑูรย์ (ผู้วิจัย) หมายเลขโทรศัพท์ 090-2202478 หรืออีเมลล์ tornado.nnt@gmail.com โดยสามารถติดต่อผู้วิจัยได้ตลอดเวลา และหากผู้วิจัยมีข้อมูลเพิ่มเติมที่เป็นประโยชน์หรือโทษเกี่ยวกับการวิจัย ผู้วิจัยจะแจ้งให้ท่านทราบอย่างรวดเร็ว



เลขที่โครงการวิจัย..... 065.1/62  
วันที่รับรอง..... 13 พ.ค. 2562  
วันที่รับผล..... 12 พ.ค. 2563  
V.2.4/2558

### APPENDIX C : Participants Information Sheet (con.)

AF 04-07

12. ข้อมูลที่เกี่ยวข้องกับผู้เข้าร่วมวิจัยทั้งหมดจะถูกเก็บเป็นความลับระหว่างผู้ให้ข้อมูลและผู้วิจัย โดยรูปแบบการนำเสนอข้อมูล จะเป็นในรูปแบบของภาพรวม ทั้งนี้ข้อมูลใดที่สามารถระบุถึงตัวท่านได้จะไม่ปรากฏในรายงาน

13. ทั้งนี้หากท่านไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าวสามารถร้องเรียนได้ที่ คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์/โทรสาร 0-2218-3202 E-mail: eccu@chula.ac.th



เลขที่โครงการวิจัย..... 065.1/62  
วันที่รับรอง..... 13 พ.ค. 2562  
วันหมดอายุ..... 12 พ.ค. 2563



## APPENDIX D : Informed Consent Form

AF05-07

### หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

ทำที่.....

วันที่.....เดือน.....พ.ศ. ....

เลขที่ ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า ซึ่งได้ลงนามท้ายหนังสือนี้ ขอแสดงความยินยอมเข้าร่วมโครงการวิจัย

ชื่อ โครงการวิจัยเรื่อง ศึกษาความสัมพันธ์ระหว่างความเครียดจากงาน การสนับสนุนทางสังคม และภาวะนอนไม่หลับ ใน ผู้ปฏิบัติงาน สาธารณสุข ใน ประเทศไทย (An association between job stress, social support and insomnia among public health workers in Thailand.)

ชื่อผู้วิจัย นางสาวกนกกรณ์ ไพฑูย์ นิสิตระดับมหาบัณฑิต วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย ที่อยู่ติดต่อ 481/4 ถ.ราชวิถี 18 แขวงสามเสนใน เขตพญาไท กรุงเทพมหานคร 10400 โทรศัพท์ 090-2202478

ข้าพเจ้า ได้รับทราบรายละเอียดเกี่ยวกับที่มาและวัตถุประสงค์ในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ความเสี่ยง/อันตราย และประโยชน์ซึ่งจะเกิดขึ้นจากการวิจัยเรื่องนี้ โดยได้อ่านรายละเอียดในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด และได้รับคำอธิบายจากผู้วิจัย จนเข้าใจเป็นอย่างดีแล้ว

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ ตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย โดยข้าพเจ้ายินยอมตอบแบบสอบถาม ทั้ง 4 ส่วน จำนวน 52 ข้อ ของการวิจัยในครั้งนี้

ข้าพเจ้ามีสิทธิถอนตัวออกจากการวิจัยเมื่อใดก็ได้ตามความประสงค์ โดยไม่ต้องแจ้งเหตุผล ซึ่งการถอนตัวออกจากการวิจัยนั้น จะไม่มีผลกระทบในทางใดๆ ต่อข้าพเจ้าทั้งสิ้น

ข้าพเจ้าได้รับคำรับรองว่า ผู้วิจัยจะปฏิบัติตามข้อที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และข้อมูลใดๆ ที่เกี่ยวข้องกับข้าพเจ้า ผู้วิจัยจะเก็บรักษาเป็นความลับ โดยจะนำเสนอข้อมูลการวิจัยเป็นภาพรวมเท่านั้น ไม่มีข้อมูลใดในการรายงานที่จะนำไปสู่การระบุตัวข้าพเจ้า

หากข้าพเจ้าไม่ได้รับการปฏิบัติตรงตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์/โทรสาร 0-2218-3202

E-mail: eccu@chula.ac.th

ข้าพเจ้าได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน ทั้งนี้ข้าพเจ้าได้รับสำเนาเอกสารชี้แจงผู้เข้าร่วมการวิจัย และสำเนานี้หนังสือแสดงความยินยอมไว้แล้ว

ลงชื่อ.....

ลงชื่อ.....

(นางสาวกนกกรณ์ ไพฑูย์, นิสิตระดับมหาบัณฑิต)

(.....)

ผู้วิจัยหลัก

ผู้มีส่วนร่วมในการวิจัย



ลงชื่อ.....

(.....)

พยาน

เลขที่โครงการวิจัย.....

065.1/62

วันที่รับรอง.....

13 พ.ค. 2562

วันหมดอายุ.....

12 พ.ค. 2563

## APPENDIX E : Questionnaires

### Appendix [2]

#### แบบสอบถาม-ภาษาไทย

##### คำชี้แจง :

แบบสอบถามฉบับนี้เป็นเครื่องมือที่ใช้ในการวิจัย ซึ่งเป็นส่วนหนึ่งของวิทยานิพนธ์ ตามหลักสูตรปริญญาโท หลักสูตรสาธารณสุขศาสตร วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย จึงใคร่ขอความร่วมมือให้ท่านพิจารณาการตอบคำถามตามความเป็นจริงและตรงกับ ความเข้าใจของท่านให้มากที่สุด โดยข้อมูลและคำตอบทั้งหมดจะถูกปกปิดเป็นความลับไม่มีการเปิดเผยรายชื่อ ไม่มีผลต่อการปฏิบัติงานของท่าน และจำนำเสนอผลการวิจัยในภาพรวมเท่านั้น หากท่านใดมีข้อสงสัยประการใดเกี่ยวกับส่วนใดส่วนหนึ่งของงานวิจัยนี้ ผู้วิจัยยินดีตอบและให้ซักถามได้ ตลอดการศึกษาวิจัย ขอขอบคุณผู้ตอบแบบสอบถามทุกท่านมา ณ ที่นี้

##### แบบสอบถามทั้งหมดประกอบด้วย 4 ส่วน :

Part 1: แบบสอบถามข้อมูลทั่วไปและข้อมูลในการปฏิบัติงาน

Part 2: แบบประเมินความเครียดจากการทำงาน

ตอนที่ 1: การควบคุมในงาน

ตอนที่ 2: ความต้องการในงาน

Part 3: แบบสอบถามแรงสนับสนุนทางสังคม

Part 4: แบบประเมินอาการนอนไม่หลับ



เลขที่โครงการวิจัย 065.1/62  
วันที่รับรอง 13 พ.ค. 2562  
วันหมดอายุ 12 พ.ค. 2563

(นางสาวกนกรัตน์ ไพฑูลย์)

นิสิตปริญญาโท สาขา Urban and Global Health

วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย



## APPENDIX E : Questionnaires (Con.)

### Appendix

#### Questionnaire-English

##### Explanation :

This questionnaire is a instrument for this study: An association between job stress and insomnia among epidemiologists in public sectors, Thailand. Which is the part of master degree at College of Public Health, Chulalongkorn University. Therefore, please answering the questionnaire with the honest and closely your opinion as much as possible. This questionnaire can provide information on a voluntary basis, not specific the name in the questionnaire. The data from the questionnaire will be confidential and will not affect the performance of the participants. If you have any questions about this study, please contact the researcher or assistance all the time through this study. And thank you all participants for your corporation and support this study.

##### Apart of questionnaire:

This study researcher used self-report questionnaire as a research tool. There are 4 parts, as the following:

Part 1: General and working information questionnaire.

Part 2: Job stress questionnaire. Including 2 sections.

Section 1: Job control

Section 2: Job Demand

Part 3: Social Support questionnaire.

Part 4: Insomnia Severity Index.

(Miss Kanokrat Paitool)

Master Degree Student ,College of Public Health Science

Chulalongkorn University

## APPENDIX E : Questionnaires (Con.)

## ส่วนที่1: แบบสอบถามข้อมูลทั่วไปและข้อมูลในการปฏิบัติงาน

คำชี้แจง โปรดทำเครื่องหมาย/ ลงบนหัวข้อที่เลือกหรือเติมข้อความลงในช่องว่างตามความเป็นจริง

1. เพศ ☐ ชาย ☐ หญิง
2. ปัจจุบันท่านอายุ ..... ปี
3. สถานภาพสมรส ☐ โสด ☐ คู่ ☐ หม้าย/หย่า/แยก
4. จำนวนบุตร ระบุ.....คน
5. ระดับการศึกษาสูงสุดของท่าน  
☐ ต่ำกว่าปริญญาตรี ☐ ปริญญาตรีหรือเทียบเท่า  
☐ ปริญญาโท ☐ ปริญญาเอก
6. ประสบการณ์ในการทำงาน ด้านระบาดวิทยา..... ปี
7. รายได้เฉลี่ยต่อเดือน ประมาณ .....บาท (รวมค่าเวร OT และรายได้พิเศษ)
8. ความเพียงพอของรายได้  
☐ ไม่เพียงพอและมีหนี้สิน ☐ เพียงพอ (ไม่มีเงินเก็บ) ☐ เพียงพอและมีเหลือเก็บ
9. สถานที่ปฏิบัติงาน  
☐ สำนักระบาดวิทยา ☐ สถาบันป้องกันควบคุมโรคเขตเมือง  
☐ สำนักงานป้องกันควบคุมโรค ระบุ..... ☐ อื่นๆ ระบุ.....
10. หน้าที่ความรับผิดชอบหลัก  
☐ ระบาดวิทยาและข่าวกรอง  
☐ ปฏิบัติการควบคุมโรคและตอบโต้ภาวะฉุกเฉินทางสาธารณสุข  
☐ กลุ่มงานสนับสนุนอื่น ๆ โปรดระบุ.....
11. จากงานหลัก/งานประจำ หรืองานส่วนใหญ่ ในข้อ 9 ที่ต้องรับผิดชอบอยู่ในปัจจุบันท่านคิดว่างานที่ท่านปฏิบัติมีความเร่งด่วนหรือไม่  
☐ เร่งด่วน ☐ ไม่เร่งด่วน
12. ตำแหน่งที่ท่านทำงานอยู่เป็นตำแหน่งระดับ  
☐ แพทย์ ☐ พยาบาล ☐ นักวิชาการสาธารณสุข  
☐ นักกึ่งวิทยา ☐ อื่นๆ ระบุ.....
13. จำนวนชั่วโมงการทำงานการปฏิบัติงานโดยเฉลี่ย.....ชั่วโมง/สัปดาห์ (รวม ชั่วโมงปฏิบัติงานOTด้วย)
14. จำนวนชั่วโมงในการเดินทางจากบ้านถึงที่ทำงาน..... ชั่วโมง/วัน (ไป-กลับ)



065.1/62  
 13 พ.ค. 2562  
 วันที่รับรอง.....  
 12 พ.ค. 2563  
 วันหมดอายุ.....

## APPENDIX E : Questionnaires (Con.)

## ส่วนที่ 2 : แบบประเมินความเครียดจากการทำงาน

คำชี้แจง กรุณาทำเครื่องหมาย / ในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุดที่สุดในกรณีที่ไม่มี

คำตอบใด ตรงกับความคิดเห็นของท่านกรุณาเลือกข้อที่ใกล้เคียงของท่านมากที่สุด กรุณาอย่าเว้นข้อ

ใดว่างไว้ โดยมีเกณฑ์ในการเลือกคำตอบ ดังนี้

- เห็นด้วยมาก หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านมากที่สุด
- เห็นด้วย หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านมาก
- ไม่เห็นด้วย หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านน้อยมาก
- ไม่เห็นด้วยมาก หมายถึง ข้อความนั้นไม่ตรงกับความคิดเห็นของท่านเลย

	ข้อคำถาม	ไม่เห็นด้วย มาก	ไม่เห็นด้วย	เห็นด้วย	เห็นด้วย มาก	สำหรับ นักวิจัย
1	ในการทำงานคุณต้องชวนขวยเรียนรู้สิ่งใหม่ๆ					
2	งานของคุณทำให้คุณต้องค้นคิดสิ่งใหม่ๆหรือคิดสร้างสรรค์					
3	งานที่คุณต้องการทักษะและความชำนาญระดับสูง					
4	ในการทำงานคุณได้พัฒนาความสามารถของตนเอง					
5	ในการทำงานคุณมีโอกาสตัดสินใจด้วยตัวเอง					
6	คุณแสดงความเห็นได้เต็มที่ในเรื่องที่เกิดขึ้นในงานของคุณ					
7	งานของคุณต้องใช้สมาธิมากและนาน					
8	โอกาสก้าวหน้าในอาชีพหรืองานของคุณดี					
9	ในเวลา 5 ปีข้างหน้า ทักษะความชำนาญของคุณยังมีคุณค่า					
10	คุณไม่มีอิสระในการตัดสินใจว่าจะทำงานยังไ					
11	คุณต้องทำสิ่งซ้ำๆหลายๆครั้งในงาน					
12	คุณต้องทำงานที่มีลักษณะหลากหลายมาก					



065.1/62  
13 พ.ค. 2562  
วันที่รับรอง.....  
12 พ.ค. 2563  
วันหมดอายุ.....

## APPENDIX E : Questionnaires (Con.)

13	งานของคุณเป็นงานที่ต้องทำอย่างรวดเร็ว					
14	งานของคุณเป็นงานหนัก					
15	งานของคุณต้องล่าช้าเพราะต้องคอยงานจากผู้อื่น/ หน่วยอื่น					
16	งานของคุณมักถูกขัดจังหวะก่อนเสร็จ ทำให้ต้องทำต่อ ทีหลัง					
17	งานของคุณยุ่งุ่นวาย					
18	งานของคุณเป็นงานที่ใช้แรงกายมาก					
19	คุณต้องเคลื่อนไหวร่างกายอย่างรวดเร็วและต่อเนื่องใน งาน					
20	คุณถูกขอให้ทำงานมากเกินไป					
21	คุณต้องแก้ไขปัญหาหรือข้อขัดแย้งที่เกิดขึ้นในงาน หรือจากเพื่อนร่วมงาน					
22	คุณมีเวลาไม่เพียงพอที่จะทำงานให้เสร็จ					



เลขที่โครงการวิจัย..... 065.1/62  
วันที่รับรอง..... 13 พ.ค. 2562  
วันหมดอายุ..... 12 พ.ค. 2563



## APPENDIX E : Questionnaires (Con.)

### ส่วนที่ 3 : แบบสอบถามแรงสนับสนุนทางสังคม

คำชี้แจง กรุณาทำเครื่องหมาย / ในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุด/น้อยที่สุดในกรณีที่ไม่มีความตอบใด ตรงกับความคิดเห็นของท่าน กรุณาเลือกข้อที่ใกล้เคียงของท่านมากที่สุด กรุณาอย่าเว้นข้อใดว่างไว้ โดยมีเกณฑ์ในการเลือกคำตอบ ดังนี้

- เห็นด้วยมาก หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านมากที่สุด
- เห็นด้วย หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านมาก
- ไม่เห็นด้วย หมายถึง ข้อความนั้นตรงกับความคิดเห็นของท่านน้อยมาก
- ไม่เห็นด้วยมาก หมายถึง ข้อความนั้นไม่ตรงกับความคิดเห็นของท่านเลย

	ข้อความ	ไม่เห็นด้วยมาก	ไม่เห็นด้วย	เห็นด้วย	เห็นด้วยมาก	สำหรับนักวิจัย
1	หัวหน้าคุณเอาใจใส่ทุกข้อของลูกน้อง					
2	หัวหน้าคุณให้ความสนใจกับสิ่งที่ลูกพูด					
3	หัวหน้าคุณเก่งในการทำให้คนทำงานร่วมกันได้					
4	หัวหน้าคุณช่วยเหลือให้งานสำเร็จลุล่วงไป					
5	ผู้ร่วมงานของคุณมีความสามารถในงานของเขาเอง					
6	ผู้ร่วมงานของคุณให้ความสนใจในตัวคุณ					
7	ผู้ร่วมงานของคุณเป็นมิตรดี					
8	ผู้ร่วมงานของคุณช่วยเหลือกันเพื่อให้งานเสร็จ					



065-1/62  
วันที่รับรอง... 13 พ.ค. 2562  
วันหมดอายุ... 12 พ.ค. 2563

## APPENDIX E : Questionnaires (Con.)

## ส่วนที่ 4 : แบบประเมินอาการนอนไม่หลับ

คำชี้แจง กรุณาทำเครื่องหมาย วงกลมรอบข้อความ ที่ตรงกับความคิดเห็นของท่านมากที่สุดในกรณีที่ไม่มีคำตอบใด ตรงกับความคิดเห็นของท่านกรุณาเลือกข้อที่ใกล้เคียงของท่านมากที่สุด (โดยอ้างอิงภายใน 1 เดือนย้อนหลัง)

ข้อคำถาม	ความคิดเห็นของท่าน				
	A	B	C	D	E
1. ท่านนอนหลับยากหรือไม่	ไม่เคย	เล็กน้อย	ปานกลาง	หลับยาก	ยากที่สุด
2. ท่านมีอาการหลับๆ ตื่นๆ หรือไม่	ไม่เคย	เล็กน้อย	ปานกลาง	บ่อย	บ่อยที่สุด
3. ท่านตื่นเชากว่าที่ต้องการหรือไม่	ไม่เคย	เล็กน้อย	ปานกลาง	มาก	มากที่สุด
4. ท่านพอใจกับการนอนหลับของท่านมากน้อยแค่ไหน	พอใจที่สุด	พอใจมาก	พอใจ	ไม่ค่อยพอใจ	ไม่พอใจเลย
5. ท่านคิดว่า คนอื่นๆ สังเกตเห็นหรือไม่ว่าท่านมีปัญหาเกี่ยวกับการนอน	ไม่เห็น	เห็นบ้าง	ปานกลาง	เห็นบ่อย	เห็นบ่อยมาก
6. ท่านมีความกังวลในเองการนอนมากแค่ไหน	ไม่เคย	กังวลนิดหน่อย	ปานกลาง	กังวลมาก	กังวลที่สุด
7. ท่านรู้สึกว่ปัญหาการนอนกระทบต่อชีวิตประจำวันของท่านมากแค่ไหน	ไม่เลย	กระทบบ้าง	ปานกลาง	กระทบมาก	มากที่สุด



เลขที่โครงการวิจัย 065-1/62  
วันที่รับรอง 13 พ.ค. 2562  
วันหมดอายุ 12 พ.ค. 2563



**APPENDIX I : Budget**

List	Item Total (THB)	Sub- Total (THB)
<b>A. Equipment</b>		
- Souvenir for participants	3,000	
- A4 papers (colour-white)	2,000	
- Ink printers	2,000	
- Computer Supplies	3,000	
- Documents, Paper and Book	5,000	
- Office material	1,000	
Total of Equipment		16,000
<b>B. Miscellaneous</b>		
- Transportation for collecting data	6,000	
- Copy	2,000	
- Hotel	4,000	
- Shipping documents/Delivery documents	2,000	
Total of Miscellaneous		14,000
<b>TOTAL COST</b>	<b>30,000</b>	



## APPENDIX J : Results Table

### Part 2 : Frequency of the Job stress questionnaires in study population among public health workers in Thailand.

Questionnaires		Frequency (N=325)			
		Very agree	agree	Dis agree	Very dis agree
<b>Job control</b>	ในการทำงานคุณต้องชวนช่วยเรียนรู้สิ่งใหม่ๆ	5	2	196	122
	งานของคุณทำให้คุณต้องค้นคิดสิ่งใหม่ๆหรือคิดสร้างสรรค์	2	23	222	76
	งานที่คุณต้องการทักษะและความชำนาญระดับสูง	3	36	203	83
	ในการทำงานคุณได้พัฒนาความสามารถของตนเอง	4	19	203	99
	ในการทำงานคุณมีโอกาสตัดสินใจด้วยตัวเอง	19	56	190	60
	คุณแสดงความเห็นได้เต็มที่ในเรื่องที่เกิดขึ้นในงานของคุณ	23	58	186	59
	งานของคุณต้องใช้สมาธิมากและนาน	4	72	191	59
	โอกาสก้าวหน้าในอาชีพหรืองานของคุณดี	49	110	139	27

	ในเวลา 5 ปีข้างหน้า ทักษะความ ชำนาญของคุณยังมีคุณค่า	7	23	220	75
<b>Psychologic al job demand</b>	คุณไม่มีอิสระในการตัดสินใจว่าจะ ทำงานยังไง	36	178	90	21
	คุณต้องทำสิ่งซ้ำๆหลายๆครั้งในงาน	9	69	196	51
	คุณต้องทำงานที่มีลักษณะ หลากหลายมาก	1	46	203	75
	งานของคุณเป็นงานที่ต้องทำอย่าง รวดเร็ว	2	50	198	75
	งานของคุณเป็นงานหนัก	12	111	151	51
	งานของคุณต้องล่าช้าเพราะต้อง คอยงานจากผู้อื่น/หน่วยอื่น	22	124	122	57
	งานของคุณมักถูกขัดจังหวะก่อน เสร็จ ทำให้ต้องทำต่อทีหลัง	19	146	136	23
	งานของคุณยุ่งวุ่นวาย	13	107	157	48
	งานของคุณเป็นงานที่ใช้แรงกาย มาก	61	167	67	30
	คุณต้องเคลื่อนไหวร่างกายอย่าง รวดเร็วและต่อเนื่องในงาน	46	176	87	15
	คุณถูกขอให้ทำงานมากเกินไป	19	159	113	34
	คุณต้องแก้ไขปัญหาหรือข้อขัดแย้งที่ เกิดขึ้นในงาน หรือจากเพื่อน ร่วมงาน	19	120	149	37
	คุณมีเวลาไม่เพียงพอที่จะทำงานให้ เสร็จ	15	172	116	22

**Part 3 : Frequency of the Social support questionnaires in study population  
among public health workers in Thailand.**

Questionnaires		Frequency (N=325)			
		Very satisfied	Satisfied	Dis satisfied	Very dis satisfied
<b>Supervisor</b>	หัวหน้าคุณเอาใจใส่ทุกข์สุข ของลูกน้อง	34	74	172	45
	หัวหน้าคุณให้ความสนใจกับ สิ่งที่คุณพูด	24	73	180	48
	หัวหน้าคุณเก่งในการทำให้ คนทำงานร่วมกันได้	42	90	154	39
	หัวหน้าคุณช่วยเหลือให้งาน สำเร็จลุล่วงไป	33	72	180	40
<b>Co-worker</b>	ผู้ร่วมงานของคุณมี ความสามารถในงานของเขา เอง	9	32	235	49
	ผู้ร่วมงานของคุณให้ความสนใจในตัวคุณ	24	73	180	48
	ผู้ร่วมงานของคุณเป็นมิตรดี	42	90	154	39
	ผู้ร่วมงานของคุณช่วยเหลือ กันเพื่อให้งานเสร็จ	6	60	195	63

**Part 4 : Frequency of the Insomnia Severity Index questionnaires in study population among public health workers in Thailand.**

Questionnaires	Frequency (N=325)				
	0	1	2	3	4
1. ท่านนอนหลับยากหรือไม่	69	140	66	37	13
2. ท่านมีอาการหลับๆ ตื่นๆ หรือไม่	59	147	66	42	11
3. ท่านตื่นเช้ากว่าที่ต้องการหรือไม่	95	128	56	35	11
4. ท่านพอใจกับการนอนหลับของท่าน มากน้อยแค่ไหน	23	57	139	75	31
5. ท่านคิดว่า คนอื่นๆสังเกตเห็น หรือไม่ว่าท่านมีปัญหาเกี่ยวกับการ นอน	179	102	29	15	0
6. ท่านมีความกังวลในเองการนอน มากแค่ไหน	137	106	50	16	16
7. ท่านรู้สึกว่ปัญหาการนอนกระทบ ต่อชีวิตประจำวันของท่านมากแค่ไหน	106	115	60	26	18

## VITA

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