



APPENDICES

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## APPENDIX A

## Demographic Data Form

Instruction: please fill in the blanks and check (✓) the appropriate response:

1. age: \_\_\_\_\_ years
2. working experience in nursing profession \_\_\_\_\_ years
3. Marital status:
  1. Never married
  2. Married
  3. Divorced
  4. Widowed or Separated
4. Educations:
  1. Secondary technical certificate
  2. Associate degree
  3. Bachelor degree
  4. Master degree and above
5. Professional title:
  1. Junior nurse (Hu shi)
  2. Senior nurse (Hu li shi)
  3. Assist.advance nurse (Zhu guan hu shi)
  4. Assoc.advance nurses or higher (Fu zhu ren hu shi)
6. Present title of your position:
  1. Staff nurse
  2. Head nurse
  3. General head nurse
  4. Director of nursing
7. Work unit :
  1. Medical
  2. Surgical
  3. Pediatric
  4. Ob-gyn & Geriatric
  5. Psychiatric ward
  6. ICU or CCU
  7. Others
8. Shift work ( number of night and evening shifts per month) :
  1. =0
  2. 1-4
  3. 5-7
  4. ≥8

## 个人基本资料问卷

填表说明：对下面每个条目，请您根据个人的实际情况选择最符合的一个，并在空格上填上相应内容或打勾“√”。

1. 年龄：\_\_\_\_\_岁
2. 从事护理职业的年限：\_\_\_\_\_年
3. 婚姻状况：
  1. 未婚
  2. 已婚
  3. 离婚
  4. 丧偶
4. 教育背景：
  1. 中专
  2. 大专
  3. 本科
  4. 硕士及以上
5. 职称：
  1. 护士
  2. 护师
  3. 主管护师
  4. 副主任护师及以上
6. 职务：
  1. 护士
  2. 护士长
  3. 科护士长
  4. 护理部主任
7. 科室：
  1. 内科
  2. 外科
  3. 儿科
  4. 妇产科
  5. 精神科
  6. 重症监护
  7. 其它

## 8. 夜班情况:

1. 平均每月夜班数 0 个
2. 平均每月夜班数 1 到 4 个
3. 平均每月夜班数 5 到 7 个
4. 平均每月夜班数 8 个及以上



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## APPENDIX B

### Occupational Fatigue Exhaustion Recovery (OFER)

These statements are about your experience of Fatigue at work and Home over the last few months. Circle a number from 0-6: "Strongly Disagree to Strongly Agree" which best indicates your response.

0= Strongly Disagree   1=Disagree   2=Slightly Disagree   3=Neither Agree or Disagree

4= Slight Agree   5=Agree   6=Strongly Agree

	0	1	2	3	4	5	6
1. I often feel I'm 'at the end of my rope' with my work							
2. I often dread waking up to another day of my work							
9. I usually have lots of energy to give to my family or friends							
10. I usually have plenty of energy left for my hobbies and other activities after I finish work							
15. I'm often still feeling fatigued from one shift by the time I start the next one							

### 职业疲劳恢复量表

以下的陈述是关于您在最近几个月的疲劳经历，请在数字 0 - 6 ( 0 = “非常不同意”到 6 = “非常同意” ) 中选择最适合的一个以表示您的选择。

0= 非常不同意    1=不同意    2=有点不同意    3=既不同意也不反对

4= 有点同意    5=同意    6=非常同意

	0	1	2	3	4	5	6
1. 我经常感到自己在工作上已经智穷力竭。							
2. 我经常害怕醒来后又要开始新一天的工作							
9. 我通常有足够的精力给与家人和朋友							
10) 当我的工作结束后，我通常有充分的精力来从事自己的爱好和其它活动							
15. 下一个工作日开始前，我							

经常感到仍没有从上一工作 日的疲劳中恢复过来						
---------------------------	--	--	--	--	--	--



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## APPENDIX C

## Job Content Questionnaire (JCQ)

## 工作内容量表

指导语：请您仔细阅读每一个问题，然后选择一个最符合的答案。

1. 我的工作需要我学习新事物。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

2. 我的工作有大量重复的劳动。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

10. 我的工作要求工作非常快。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

11. 我的工作要求工作非常努力。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

24. 我的上司很关心下属的利益。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

25. 我的上司能听取我的意见。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意

34. 我和同事间有矛盾或彼此对立。

(1) 完全不同意 (2) 不同意 (3) 同意 (4) 非常同意





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### Job Content Questionnaire

Instruction: Please answer each question by checking of f the one answer that best fits your job situation.

1. My job requires that I learn new things.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
2. My job involves a lot of repetitive work.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
9. My job requires working very fast.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
10. My job requires working very hard.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
24. My supervisor is concerned about the welfare of those under him/her.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
25. My supervisor pays attention to what I am saying.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree
34. I am exposed to conflict or hostility from my co-workers.  
(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree

## APPENDIX D

## Job Dissatisfaction Scale

## 工作不满意量表

指导语：仔细阅读每一个问题，然后选择一个最适合的答案。

1. 你对你工作的满意情况如何？

(1) 不满意 (2) 不太满意 (3) 有点满意 (4) 非常满意

2. 你会推荐你的朋友从事这项工作吗？

(1) 不推荐 (3) 有所犹豫 (5) 推荐

5. 你现在从事的工作正是你想要选择的吗？

(1) 正是 (3) 有点是 (5) 不太是

### Job Dissatisfaction Scale

**Instruction:** Please answer each question by checking off the one answer that best fits your response.

1. How satisfied are you with your job?  
(1) not at all (2) not too (3) somewhat (4) very
2. Would you advise a friend to take this job?  
(1) advise against (3) have doubts about it (5) strongly recommend
3. Is this job like what you wanted when you applied for it?  
(1) very much (3) somewhat like (5) not very much like

## APPENDIX E

### Exposure to Hazards in Hospital Work Environments (EHHWE)

**Instructions:** The followings questions are designed to address exposure to hazards in your hospital work environments. Please read each item in the list carefully. Select the one number from 1(Never) to 5 (Always), which best indicates your response.

What is the frequency of your work place exposure to the following:	Never 1	Rarely 2	Sometimes 3	Often 4	Always 5
1.Noise					
2.Inappropriate lighting					
.					
.					
10.Blood					
11.Feces					
.					
.					
.					
19. Disinfectants					
20. Detergents					

# Exposure to Hazards in Hospital Work Environments (EHHWE)

## 医院工作环境职业暴露量表

**指导语:** 以下问题是关于您在医院工作环境中暴露于某些因子的频率。请仔细阅读每一项因子，然后在数字 1 ( 1 = 从不 ) 到 5 ( 5 = 总是 ) 中选择一个最符合您实际情况的答案。

在您的工作环境中，暴露于以下因子的频率：	从不 1	很少 2	有时 3	经常 4	总是 5
1. 噪音					
2. 光线不适合					
.					
.					
10. 血液					
11 粪便					
.					
.					
19. 消毒剂					
20. 洗涤剂					

## APPENDIX F

## Pittsburgh Sleep Quality Index (PSQI)

## 匹兹堡睡眠质量指数

指导语：下面一些问题是关于您最近一个月的睡眠状况，请填写或选择出最符合您实际情况的答案并回答所有问题。

1. 近1个月，晚上上床睡觉时间通常是\_\_\_\_\_点钟？
2. 近1个月，从上床到入睡通常需要\_\_\_\_\_分钟？
3. 近1个月，通常早上\_\_\_\_\_点起床？
4. 近1个月，每夜通常实际睡眠时间\_\_\_\_\_小时(不等于卧床时间)

5. 近一个月，您有没有因下列情况影响睡眠而烦恼：	无 (0)	小于1次/周 (1)	1 - 2次/周 (2)	大于等于3次/周 (3)
a. 入睡困难, 30分钟内不能入睡				
b. 夜间易醒或早醒				
.				
.				
.				
j. 近1个月，其他影响睡眠的事情_____：				
6. 近1个月，您用药物催眠的情况				
.				
.				
	很好 (0)	较好 (1)	较差 (2)	很差 (3)
9. 近1个月，总的来说，您认为自己的睡眠质量				

对于下列问题请选择 1 个最适合您的答案



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### Pittsburgh Sleep Quality Index (PSQI)

Instructions: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for all questions.

During the past month:

1. When have you usually gone to bed? \_\_\_\_\_
2. How long (in minutes) has it taken you to fall asleep each night?  
\_\_\_\_\_
3. When have you usually gotten up in the morning? \_\_\_\_\_
4. How many hours of actual sleep did you get that night? (This may be different than the number of hours you spend in bed) \_\_\_\_\_

5. During the past month, how often have you had trouble sleeping because you .....	Not during the past month (0)	Less than once a week (1)	Once or twice a week (2)	Three or more times a week (3)
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
.				
.				
j. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):				
6. During the past month, how often have you taken medicine (prescribed or "over the counter") to help you sleep?				
.				
.				
	Very good (0)	Fairly good (1)	Fairly bad (2)	Very bad (3)
9. During the past month, how would you rate your sleep quality overall?				

## APPENDIX G

## Beck Anxiety Inventory (BAI)

## 贝克焦虑量表

指导语：下面是一份关于焦虑一般症状的表格，请您仔细阅读下列各项，指出在最近的一周中，包括当天，被下列各种症状烦扰的程度，并在相应的空格中圈出最符合的数字。

	无	轻度,无多大 烦扰	中度,不时使我 烦扰	重度,经常使我 烦扰
麻木或刺痛	0	1	2	3
感到发热	0	1	2	3
害怕发生不好的事情	0	1	2	3
头晕	0	1	2	3
.				
.				
消化不良	0	1	2	3
.				
.				
出热/冷汗	0	1	2	3

### Beck Anxiety Inventory (BAI)

Instructions: Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not At All	Mildly but it didn't bother me much.	Moderately - it wasn't pleasant at times	Severely - it bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Fear of worst happening	0	1	2	3
Dizzy or lightheaded	0	1	2	3
.				
Indigestion	0	1	2	3
.				
.				
Hot/cold sweats	0	1	2	3

## APPENDIX H

## Beck Depression Inventory (BDI)

## 贝克抑郁量表

## 1. 忧伤

- 0 我不感到忧伤.
- 1 我感到忧伤.
- 2 我始终忧伤, 且不能改变这种情绪.
- 3 我太忧伤或不愉快, 以致我不能忍受.

## 2. 悲观

- 0 我对将来并不感到悲观.
- 1 我对将来感到悲观.
- 2 我感到没有什么可指望的.
- 3 我感到将来无望, 事事都不能变好.

·  
·  
·  
·

## 20. 躯体不适

- 0 与以往比, 我并不过分担心身体健康.
- 1 我担心身体上的问题, 如疼痛、胃不适或便秘.
- 2 我非常担心身体问题, 从而妨碍我想别的事.
- 3 我的体重下降 15 斤以上.

## 21. 性欲丧失

- 0 我的性欲最近没有什么变化.
- 1 我的性欲比以往差些.
- 2 现在我的性欲比以往减退了许多.
- 3 我完全丧失了性欲.

### Beck Depression Inventory (BDI)

#### 1. Sad

- 0 I do not feel sad.
- 1 I feel sad
- 2 I am sad all the time and I can't snap out of it.
- 3 I am so sad and unhappy that I can't stand it.

#### 2. Pessimism

- 0 I am not particularly discouraged about the future.
- 1 I feel discouraged about the future.
- 2 I feel I have nothing to look forward to.
- 3 I feel the future is hopeless and that things cannot improve.

#### 20. Somatic preoccupation

- 0 I am no more worried about my health than usual.
- 1 I am worried about physical problems such as aches and pains, or upset stomach, or constipation.
- 2 I am very worried about physical problems and it's hard to think of much else.
- 3 I am so worried about my physical problems that I cannot think about anything else.

#### 21. Loss of libido

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I have almost no interest in sex.
- 3 I have lost interest in sex completely.

## APPENDIX I

### Lists of Back Translation Experts

Back Translation Experts for the OFER Scale

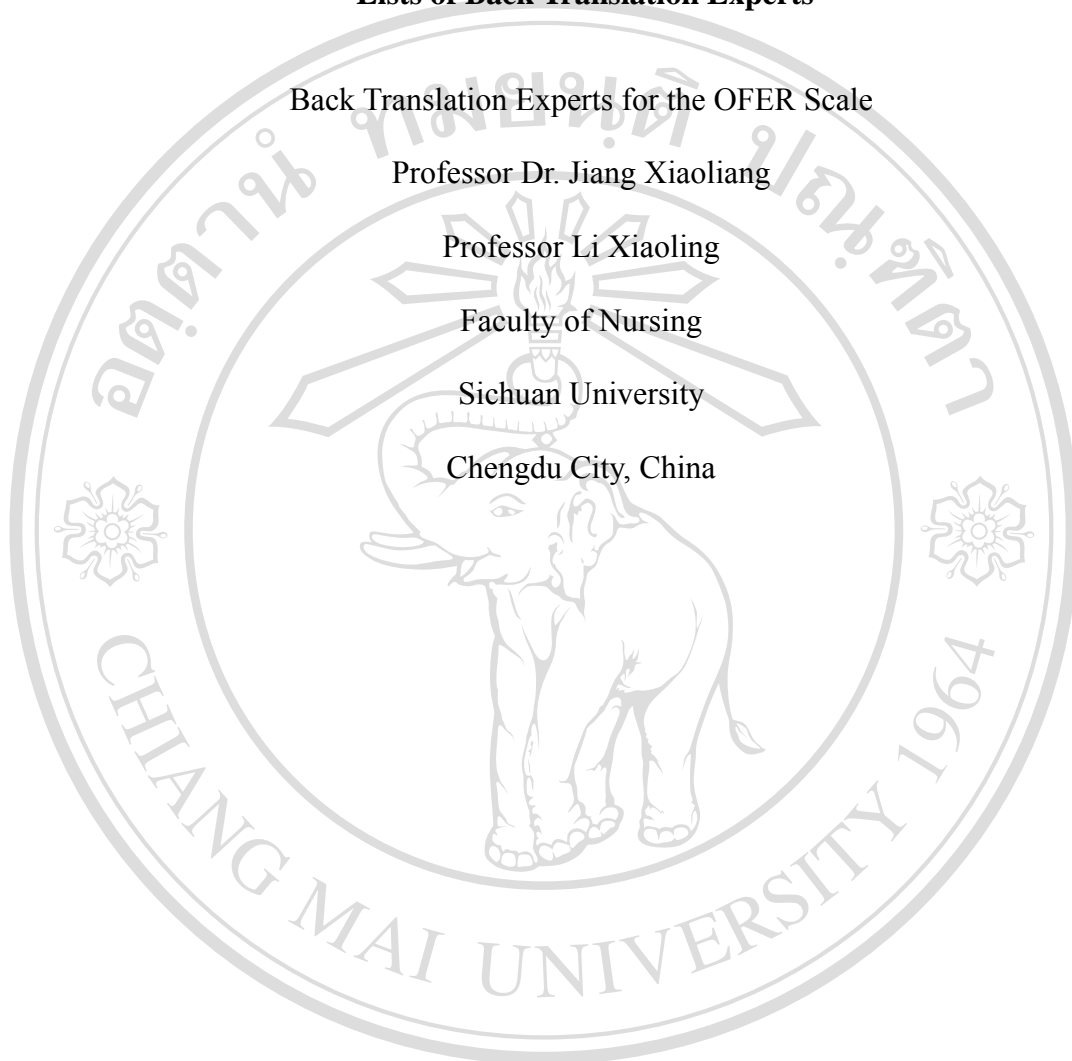
Professor Dr. Jiang Xiaoliang

Professor Li Xiaoling

Faculty of Nursing

Sichuan University

Chengdu City, China



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## APPENDIX J

### List of Experts for Content Validity

Seven experts who validate content of the Exposure to Hazards in Hospital Work Environments Scale (EHHWES) are presented as follows:

1. Beverley Hanowski, RN, BScN, OHNC, CIC  
Occupational Health/Infection Control Consultant, Cross Cancer Institute,  
Edmonton, Canada
2. Eva Kopecka, RN, OHNC  
Office of Environmental Health & Safety, University of Alberta, Canada
3. Gail Ramsden, RN, COHN(C)  
Occupational Health/Infection Control Consultant, Cross Cancer Institute,  
Edmonton, Canada
4. Louise Giacomazzi, RN, COHN(C), CRSP  
NAIT Health and Safety, Alberta, Canada
5. Joanne Seglie, RN, COHN(S), Manager  
Department of Occupational Health, University of Alberta, Canada
6. Lisa Myles, RN, DOHN  
Northern Alberta Institute of Technology & Occupational Health Service,  
Edmonton, Canada
7. Connie Pieprzyk, RN, BScN,  
Occupational Health, Safety and Wellness Acting Senior Manager Health,  
Edmonton, Canada

## APPENDIX K

### Calculation of CVI of the EHHWE

An Index of Validity was calculated by using the formula as

CVI= Number of items rated 3 or 4 by both experts/ Total items

CVI value of each pair of seven experts was calculated, and then the average CVI value was obtained by dividing of all CVI value with 21

CVI between expert 1 & 2 =  $17/20 = 0.85$

Utilizing the same method, CVI value between each pair of experts are as follow:

1& 2= .85

3& 4= .80

1& 3= .80

3& 5= .80

1& 4= .85

3& 6= .80

1& 5= .85

3& 7= .80

1& 6= .85

4& 5= .95

1& 7= .85

4& 6= 1

2& 3= .85

4& 7= 1

2& 4= .95

5& 6= .95

2& 5= .95

5& 7= .95

2& 6= 1

6& 7= 1

2& 7= 1

The average CVI=  $(.85+.80+.85+.85+.85+.85+.85+.95+.95+1+1+.80+.80+.80+.80+.95$   
 $+1+1+.95+.95+1)/21$   
 $= .90$



## APPENDIX L

### Permission to use the instrument

From : Peter Winwood <pwinwood@internode.on.net>  
 Sent: Wednesday, January 31, 2007, 7:52.AM  
 To: Fang jinbo <fangjinbo1107@gmail.com>  
 Subject: RE: May I have your permission

Hi there,  
 Thank you for your kind enquiry. Yes by all means you may use the OFER scale. I have attached a copy of the latest version of the scale and scoring key for your use. Keep me informed of your research progress.  
 Kind regards  
 Peter Winwood

---Original Message----

From : Fang jinbo <fangjinbo1107@gmail.com>  
 Sent: Tuesday, January 30, 2007, 3:30 PM  
 To: Peter Winwood [pwinwood@internode.on.net](mailto:pwinwood@internode.on.net)  
 Subject: May I have your permission

Dear professor Peter,  
 I am sorry to disturb you. My name is Fang Jinbo and I am a Doctoral nursing student in Faculty of Nursing, ChiangMai University. I read your article titled "Development and validation of a scale to measure work-related fatigue and recovery: The Occupation Fatigue Exhaustion/Recovery". I am so interested in it. Right now, I am preparing my proposal, and my topic is "A predicting model for fatigue in Chinese nurses". May I get the permission from you to use this scale?

Best regards

Jinbo

Doctoral Student, Faculty of Nursing  
 Chiang Mai University  
 Thailand

**Permission to use the instrument (Continued)**

From : Vicki Gillmore <[vgillmor@masonicvillagespa.org](mailto:vgillmor@masonicvillagespa.org)>

Sent: Tuesday, March 6, 2007, 11AM

To: Lynn Skillen <[lynn.skillen@ualberta.ca](mailto:lynn.skillen@ualberta.ca)>

Cc : Fang jinbo <[fangjinbo1107@gmail.com](mailto:fangjinbo1107@gmail.com)>

Subject: Response to your voice message

Dear Dr. Skillen,

I got your voice mail and I am pleased to have Jinbo use and modify my questionnaire. I would love to read her paper when it is finished!! Let me know if there is anything else you need. Thanks for the contact.

My email at work is [vgillmor@masonicvillagespa.org](mailto:vgillmor@masonicvillagespa.org), and work phone is 717-367-1121 X 33139. My home email is [vgillmore1429@comcast.net](mailto:vgillmore1429@comcast.net) and my home phone is 717-653-4141.

Kind regards

Gillmore

# Permission to use the instrument (Continued)



University of  
Massachusetts  
Lowell

One University Avenue, Kitson 200  
Lowell, Massachusetts 01854  
tel: 978.934.3250  
fax: 978.452.5711  
web site: <http://www.uml.edu/College/She>

Department of  
Work Environment

SCHOOL OF HEALTH AND ENVIRONMENT

October 10, 2006

Fang Jinbo  
Faculty of Nursing  
Chiang Mai University  
Changmai, Thailand  
50200

Dear Ms. Jinbo:

Thank you for your interest concerning the "Job Content Instrument: Questionnaire and User's Guide." We have received your "JCQ Data Base Form" and your signed permission form.

I hereby send our questionnaire and validation report and research literature as requested. We look forward to supplying you with information that may assist in your research.

You may find more references and information in our book, Robert Karasek and Tores Theorell: Healthy Work, published by Basic Books, 1990.

Sincerely,

Robert A. Karasek, Ph.D.  
Professor, Work Environment

Enclosures: JCQ User's Guide and Questionnaire  
w/Global Economy and new Psychological Strain Scales  
w/Karasek, et al, NIOSH, 1982  
Karasek, et al (1983/ U.S., QES 1970's) Validation Report  
Karasek and Thorell (1990 Healthy Work, Appendix 1)  
Karasek, Schwartz, Theorell, Final NIOSH Report (1982)  
Kristenssen (1995) Stress Med.  
Kristenssen (1996) J Occ Hlth Psych  
Schnall, Landsbergis, Baker (1994) Annual of Pub. Health.  
Kawakami (1996), Industrial Health  
Karasek (1979), Administrative Science Quarterly

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**APPENDIX M**

**IRB Approval**



No.083/2007

**CERTIFICATE OF ETHICAL CLEARANCE**  
**Research Ethics Review Committee**  
**Faculty of Nursing, Chiang Mai University**

The Research Ethics Review Committee of the Faculty of Nursing,  
Chiang Mai University declares approval of

**Research Project Title :** A Model for Predicting Fatigue in Chinese  
Nurses

**Principal Investigator :** Mrs. Fang Jinbo

**Participating Institution :** Doctoral Student Faculty of Nursing  
Chiang Mai University


The above research project does not violate rights, well being, and/or  
endanger human subjects and is justified to conduct the research procedures  
as proposed.

This clearance is valid from the date of approval to July 23, 2008

Date of approval July 23, 2007

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.....  
(Professor Dr. Wichit Srisuphan)  
Chair, Research Ethics Review Committee  
Faculty of Nursing, Chiang Mai University

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.....  
(Associate Professor Dr. Wipada Kunaviktikul)  
Dean of Faculty of Nursing, Chiang Mai University



## Appendix N

## Permission Letter from Sampled Hospitals

尊敬的 李进 主任:

您好!

我叫方进博，系四川大学华西医院职工，2005 年 6 月经我院护理部选派赴泰国清迈大学护理学院攻读护理博士学位，现回国做博士论文，论文题目为“中国护士职业疲劳预测模型”。该课题针对护士职业疲劳的间接和直接影响因素进行了综合的研究，旨在建立一个护士职业疲劳的预测模型，以供护理管理人员对护士的职业疲劳进行预测，从而为今后的护理干预提供依据，并且为进一步建立护士职业疲劳的护理理论提供实证。该课题需要在成都市区医院工作的护士中抽样，课题以发放问卷的形式，由护士自行填写后回收。该课题遵循科学研究的伦理原则，资料收集以匿名的方式，研究结果以整体形式报告在论文中，且研究结果仅用于此次研究，决不作为其它任何用途，不会对护士造成任何的伤害。

该课题拟在贵院的护士中收集资料，特恳请得到贵院护理部的允许和协助。  
如贵院护理部同意，请签字盖章：\_\_\_\_\_

非常感谢!

课题研究者：四川大学华西医院 方进博

2007 8 月 9 日

尊敬的 李锐 主任：

您好！

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非常感谢！

课题研究者：四川大学华西医院

2007 年 8 月 9 日

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尊敬的 蔡中敏 主任:

您好!

我叫方进博,系四川大学华西医院职工,2005年6月经我院护理部选派赴泰国清迈大学护理学院攻读护理博士学位,现回国做博士论文,论文题目为“中国护士职业疲劳预测模型”。该课题针对护士职业疲劳的间接和直接影响因素进行了综合的研究,旨在建立一个护士职业疲劳的预测模型,以供护理管理人员对护士的职业疲劳进行预测,从而为今后的护理干预提供依据,并且为进一步建立护士职业疲劳的护理理论提供实证。该课题需要在成都市区医院工作的护士中抽样,课题以发放问卷的形式,由护士自行填写后回收。该课题遵循科学研究的伦理原则,资料收集以匿名的方式,研究结果以整体形式报告在论文中,且研究结果仅用于此次研究,决不作为其它任何用途,不会对护士造成任何的伤害。

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如贵院护理部同意,请签字盖章: \_\_\_\_\_

非常感谢!

课题研究者: 四川大学华西医院

2007 8 月 16 日

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尊敬的  主任：

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如贵院护理部同意，请签字盖章：\_\_\_\_\_

非常感谢！

课题研究者：四川大学华西医院



2007 8 月 1 日

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尊敬的黄敏主任：

您好！

我叫方进博，系四川大学华西医院职工，2005 年 6 月经我院护理部选派赴泰国清迈大学护理学院攻读护理博士学位，现回国做博士论文，论文题目为“中国护士职业疲劳预测模型”。该课题针对护士职业疲劳的间接和直接影响因素进行了综合的研究，旨在建立一个护士职业疲劳的预测模型，以供护理管理人员对护士的职业疲劳进行预测，从而为今后的护理干预提供依据，并且为进一步建立护士职业疲劳的护理理论提供实证。该课题需要在成都市区医院工作的护士中抽样，课题以发放问卷的形式，由护士自行填写后回收。该课题遵循科学研究的伦理原则，资料收集以匿名的方式，研究结果以整体形式报告在论文中，且研究结果仅用于此次研究，决不作为其它任何用途，不会对护士造成任何的伤害。

该课题拟在贵院的护士中收集资料，特恳请得到贵院护理部的允许和协助。如贵院护理部同意，请签字盖章：

非常感谢！

课题研究者：四川大学华西医院

2007 年 8 月 3 日

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**APPENDIX O****Information Sheet and Information Consent Form****Information for Nurses**

Dear nurse,

My name is Fang Jinbo. As a nursing professional and doctoral candidate, I am inviting your assistance in a study entitled “A model for predicting fatigue in Chinese nurses”. You are invited to take part in this research because you are a nurse currently working in general hospitals and providing direct care for patients, and you may concern Chinese nurses’ and your occupational health conditions. The purpose of the study is to examine the relationship among fatigue and their possible influencing factors (shift work, job demand, job control, support at work, sleep quality, job dissatisfaction, anxiety, depression and intershift recovery), then developing a predicting model. The findings of this study will benefit nursing professionals in the future and contribute to professional health program to decrease fatigue in Chinese nurses. This study will be conducted at general hospitals in Chengdu City, Sichuan Province, P.R.China. The duration of data collection is from July, 2007 to September, 2007.

I would like to invite you to participate the study. Your interest will not be affected by your decision to participate or not. You may choose not to answer some of the questions and you are free to withdraw from the study at any time.

I would appreciate your participation in the study. You are requested to take the package home and complete the questionnaires in your own time under a quiet, bright and comfortable environment. You will take around 25-30 minutes to fill out forms that ask questions about your demographic data, fatigue, work schedule, work-related factors, such as your perception about exposure to hazards in hospital work environments, job characteristics, your job perception, and your sleep pattern, and mood. After you complete, please return the questionnaires to the researcher in the enclosed envelope with a one-week period.

Confidentiality will be ensured in this study. Your name will not appear on any of the questionnaires and examination paper and cannot be linked to any information that you provide. Your surveys will be numerically coded. Codes will be linked to a master list that links your code to your identity. All information will be kept in a locked file cabinets and a password-restricted computer. Only the investigator will have access to this information. If the findings of this study are published, they will be written in a way that protects your identity. The questionnaires will be kept in a secure place for five years and then destroyed.

The risks will be minimal to nonexistent. The benefits to the individual participant

will be also minimal. However, the results of this study may benefit the whole-nursing professionals for carrying out the occupational health program in nurses. I would like to ask you to sign a consent form. Thank you very much for your assistance.

In addition, any other benefit or copyrights that may be the result of this research project must be in accordant with the rules and regulations of Chiang Mai University. If you have any questions or concerns regarding to the human right in research participation, you may contact ethic committee chair person Prof. Emeritus Dr. Wichit Srisuphan from Faculty of nursing, Chiang Mai University, Thailand and chair persons of Research Ethic Considerations from China. Also, if you have any concerns about any aspect of this study, you also may contact me, Mrs. Fang Jinbo at any time. The fee for contacting will pay back to you. The contacted addresses are:

Mrs. Fang Jinbo, Nursing Department, Huaxi Hospital, Sichuan University

Phone number: 028-85422044; email: [fangjinbo1107@gmail.com](mailto:fangjinbo1107@gmail.com)

Prof. Emeritus Dr. Wichit Srisuphan, Faculty of nursing, Chiangmai University, Thailand. Phone number: 66-53-945022; email: [wichit@mail.nurse.cmu.ac.th](mailto:wichit@mail.nurse.cmu.ac.th)

Professor. Cheng Yijuan, Nursing Department, Huaxi Hospital, Sichuan University

Phone number: 028-85422042; email: [yijuancheng@163.com](mailto:yijuancheng@163.com)

Professor. Li Jiping, Nursing Department, Huaxi Hospital, Sichuan University

Phone number: 028-85422044; email: [Li-jiping@163.com](mailto:Li-jiping@163.com)

Associate professor. Song Jinping, Nursing Department, Huaxi Hospital, Sichuan University

Phone number: 028-85423808; email: [songjinping@163.com](mailto:songjinping@163.com)

Professor Dr. Jian Xiaolian, School of Nursing, Sichuan University

Phone number: 028-85422185; email: [xiaolianjiang@hotmail.com](mailto:xiaolianjiang@hotmail.com)

Professor Li Xiaoling, School of Nursing, Sichuan University

Phone number: 028-85422184; email: [jannifer@163.com](mailto:jannifer@163.com).

Sincerely,  
Fang Jinbo

### **Consent to Participate In a Research Study**

Title of study: A model for predicting fatigue in Chinese nurses

Investigator: Fang Jinbo, Doctoral candidate, Faculty of Nursing, Chiang Mai University, Thailand.

Major Advisor: Associate Professor Dr. Wipada Kunaviktikul, Dean of Faculty of nursing, Chiang Mai University, Phone: 66-53-945022  
Email: wipada@mail.nurse.cmu.ac.th

Investigator's address: 1. Faculty of Nursing, Chiang Mai University, 50200  
2. Huaxi Hospital, Sichuan University, Chengdu City, 610041

Research Study: You are invited to participate in a research study (the investigator's doctoral dissertation work) that will develop a model for predicting fatigue in Chinese nurses. Several variables such as shift work, job demand, job control, support at work, exposure to hazards in hospital work environments, job dissatisfaction, sleep quality, anxiety, depression and intershift recovery will be investigated to examine the relationships to acute and chronic fatigue. You have been invited to take part in this research because you are a nurse currently working in general hospitals and a provider of direct care for patients. The information will be used to develop an occupational health program that will help reduce fatigue in Chinese nurses. In order to decide whether or not you should agree to a part of this study, you should understand enough about its risks and benefits to make an informed judgment. This process is known as informed consent.

This consent form gives you detailed information about this research study, and will go over all aspects of this research: its purpose, procedure, and possible risks and benefits of participants. Once you understand the study and you wish to participate, please sign this consent form and keep the copy for your records.

Purpose: The purpose of this study is to gather information about acute and chronic fatigue, and its possible influencing factors (shift work, job demand, job control, support at work, sleep quality, job dissatisfaction, anxiety, depression and intershift recovery), then developing a predicting model.

Procedures: You are being asked to fill out forms that ask questions about your demographic data, fatigue, work schedule, work-related factors, such as your exposure to hazards in hospital work environments, job characteristic, your perception about your job, and your sleep pattern, and mood.

Duration: These questions will take you about 25-30 minutes in total to complete, and will only be administered once.

Subjects: You will be one of 668 nurses to participate in this study.



**Exclusion:** Current on maternity or disability leaves during data collection were excluded.

**Risks:** It is highly unlikely you will have any injury as a result of participating in this study. It is possible that answering the questions may call your attention to problems that you may experience as a result of your work characteristics. You may have psychological discomforts when you are answering the questions, which may bring about some unpleasant feelings. You may feel muscle tension as well. You have right to withdraw and leave space blank if you feel uncomfortable to answer the questionnaires. You are also advised to contact employee health service in order to discuss these problems and the investigator will pay for it.

**Benefits:** You will receive a token of appreciation about 10 Yuan to thank for your participation. Other direct benefit from this study to you may be minimal. However, the results of this study may benefit the whole-nursing professionals for carrying out the occupational health program in nurses in the future. You may benefit from the study by becoming more aware of your level of fatigue, sleep, mood, and your physical and psychosocial work conditions.

**Confidentiality:** Your name will not appear on any of the questionnaires and examination paper and cannot be linked to any information that you provide. Your surveys will be numerically coded. Codes will be linked to a master list that links your code to your identity. All information will be kept in a locked file cabinets and a password-restricted computer. Only the investigator will have access to this information. If the findings of this study are published, they will be written in a way that protects your identity. The questionnaires will be kept in a secure place for five years and then destroyed.

**Financial costs to participants:** There will be no cost to you for your participation in this study.

**Right to refuse or withdraw:** Your participation in this study is completely voluntary and you may refuse to participate, or may discontinue your participation at any time, without penalty or loss of benefits to which you are otherwise entitled. Your decision not to participate will not bring any harm to you. If you choose to withdraw, the research will keep all of the information collected before your withdrawal as part of the permanent files of the research study.

**Study results:** Group results will be available to you upon request following the completion of data collection and analysis.

**Individuals to contact:** If you need further information regarding this study, you may contact Mrs Fang Jinbo by telephoning 028-85422044, by writing to her at Huaxi Hospital, Sichuan University, 610041, or by email: fangjinbo1107@gmail.com. If you have any questions or concerns regarding to the human right in research participation, you may contact ethic committee chair person Prof. Emeritus Dr. Wichit Srisuphan by telephoning 66-53-945022, or by email: wichit@mail.nurse.cmu.ac.th. The cost of

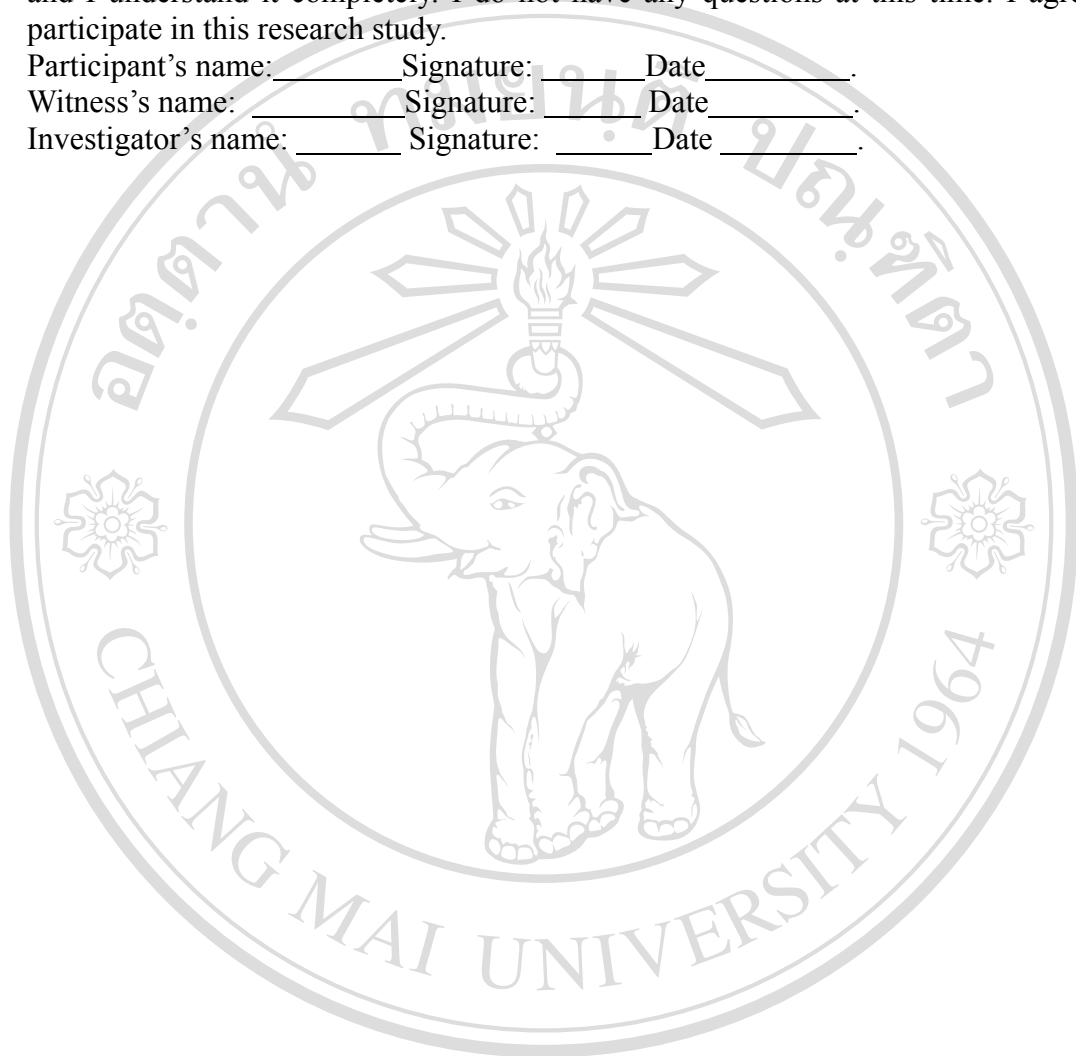
your telephone call will be reimbursed by the investigator.

Signature of participant: I have read this entire consent form, received a copy of it, and I understand it completely. I do not have any questions at this time. I agree to participate in this research study.

Participant's name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date \_\_\_\_\_.

Witness's name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date \_\_\_\_\_.

Investigator's name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date \_\_\_\_\_.



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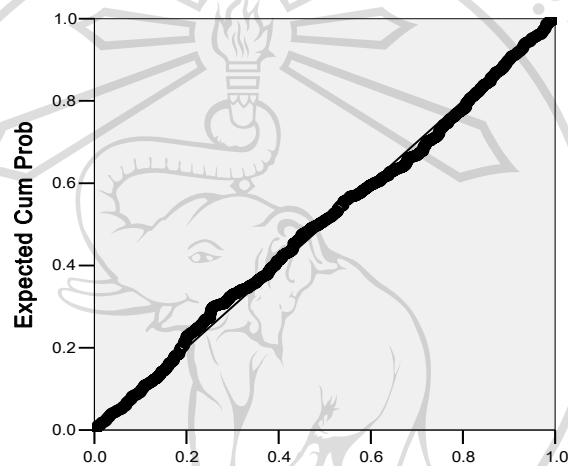
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## APPENDIX P

## Examinations of Statistical Assumptions

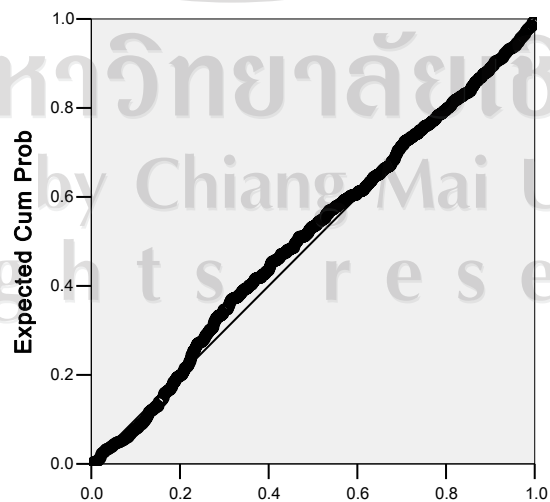
## Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Chronic Fatigue



## Normal P-P Plot of Regression Standardized Residual

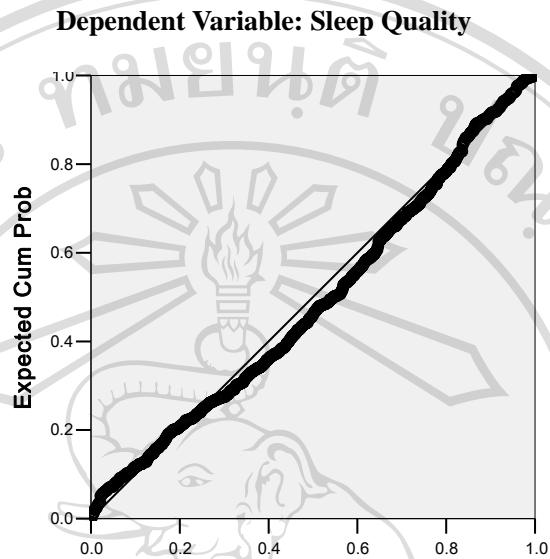
Dependent Variable: Acute Fatigue



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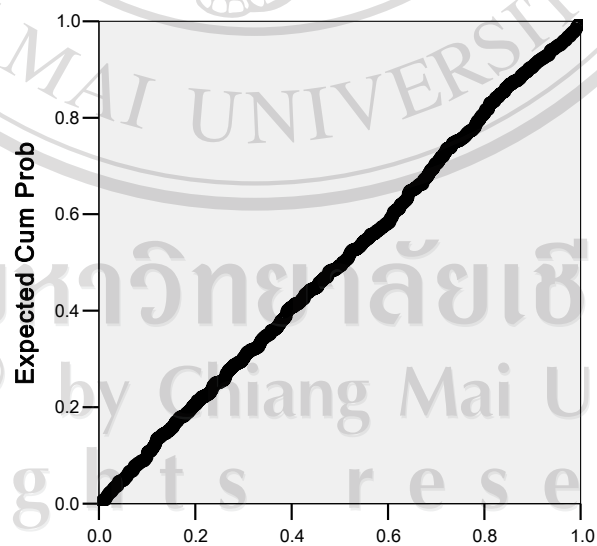


Normal P-P Plot of Regression Standardized Residual

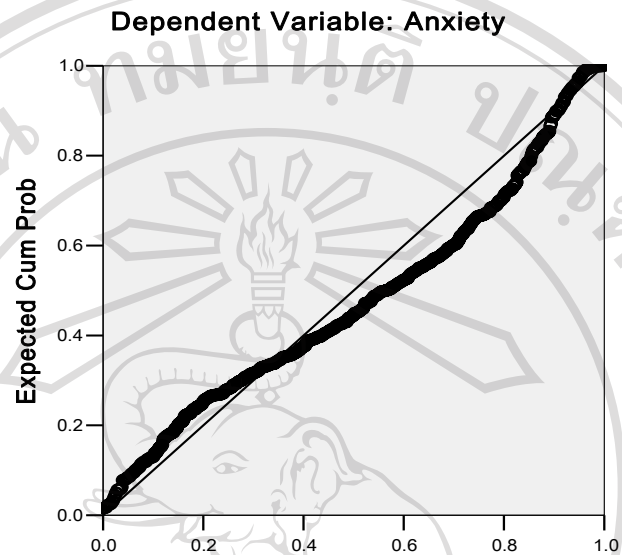


Normal P-P Plot of Regression Standardized Residual

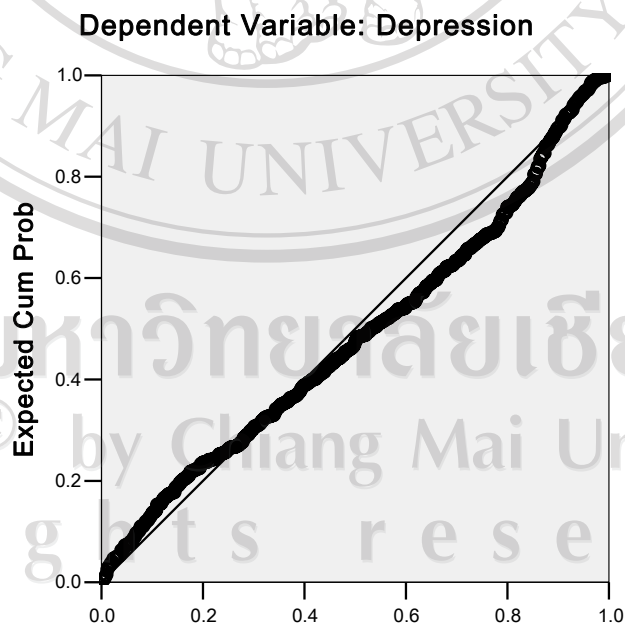
**Dependent Variable: Job Dissatisfaction**



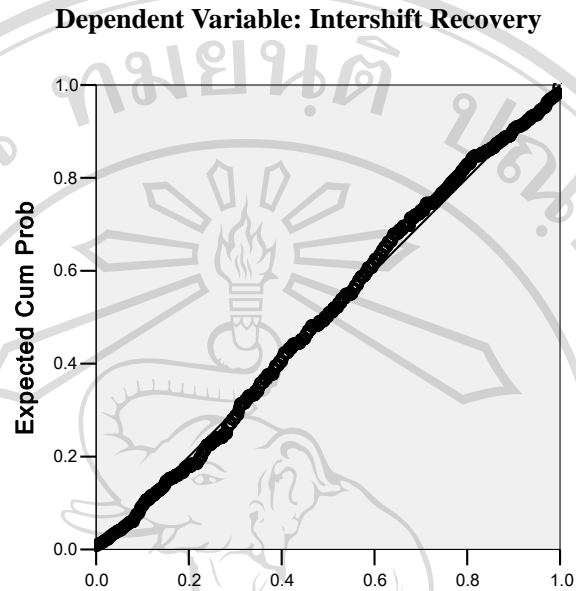
Normal P-P Plot of Regression Standardized Residual



Normal P-P Plot of Regression Standardized Residual

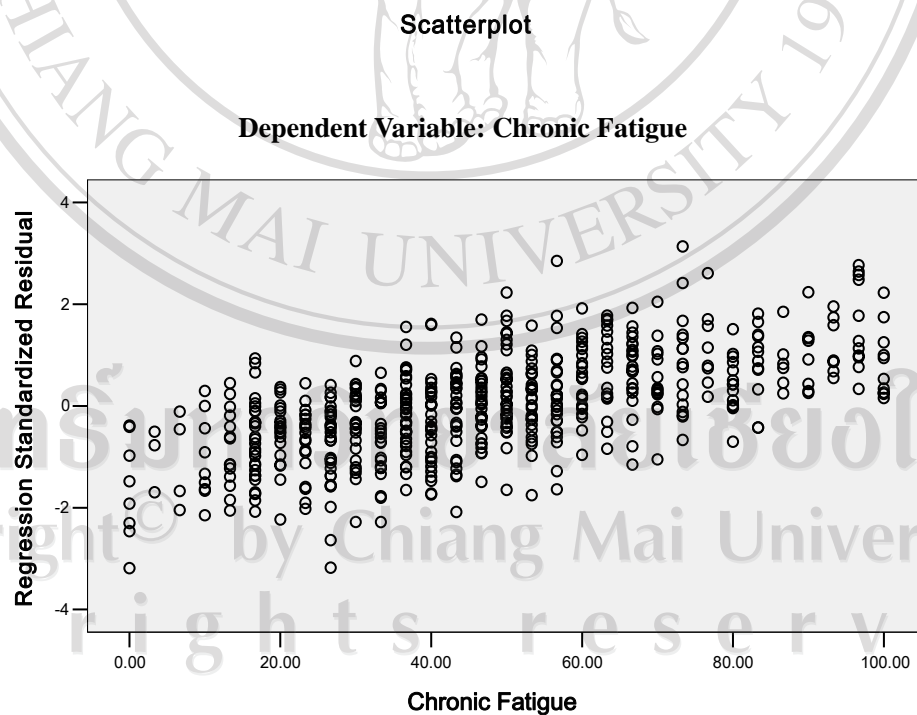
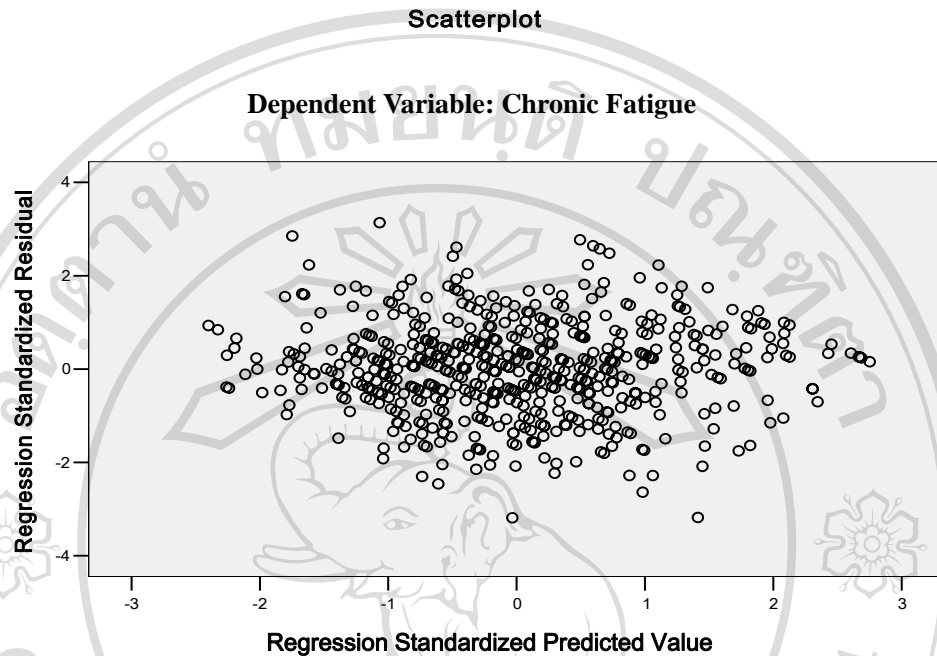


## Normal P-P Plot of Regression Standardized Residual



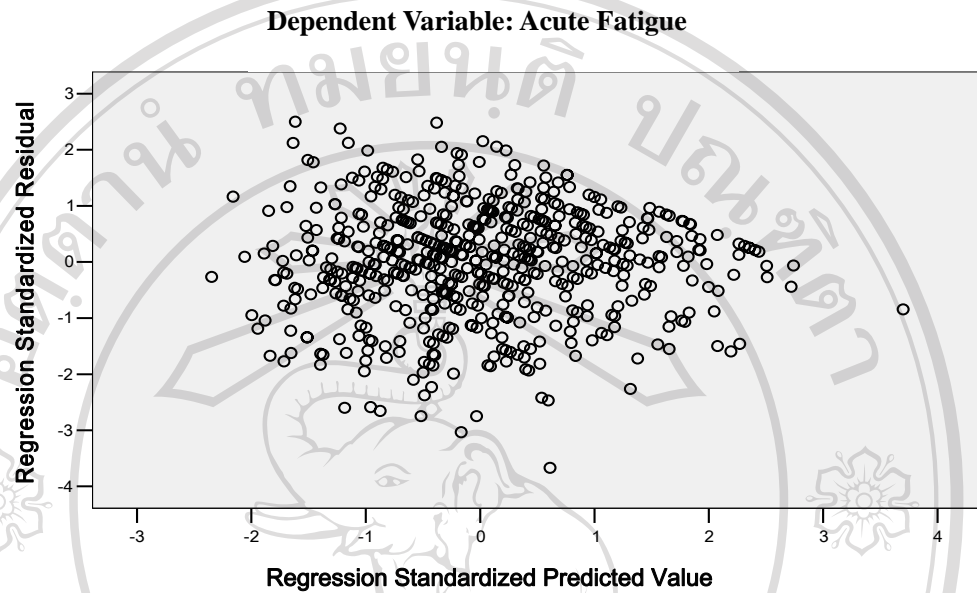
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## APPENDIX P

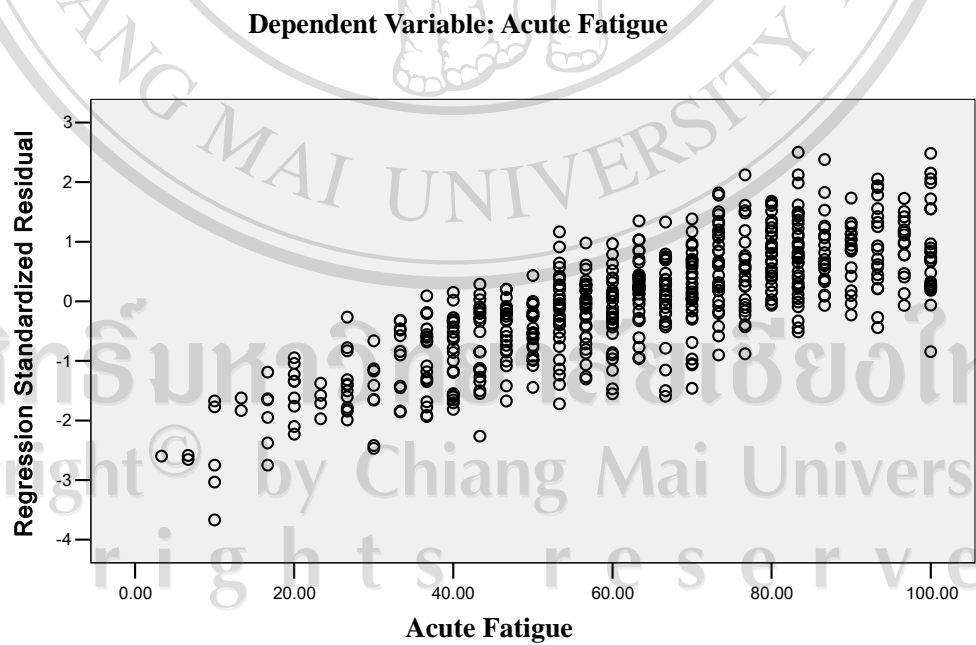


Predictors: Shift work, Job control, Job demand, Support at work, Exposure to Hazards in Hospital Work Environments, Sleep quality, Job dissatisfaction, Intershift recovery, Anxiety, Depression, Acute fatigue

Scatterplot

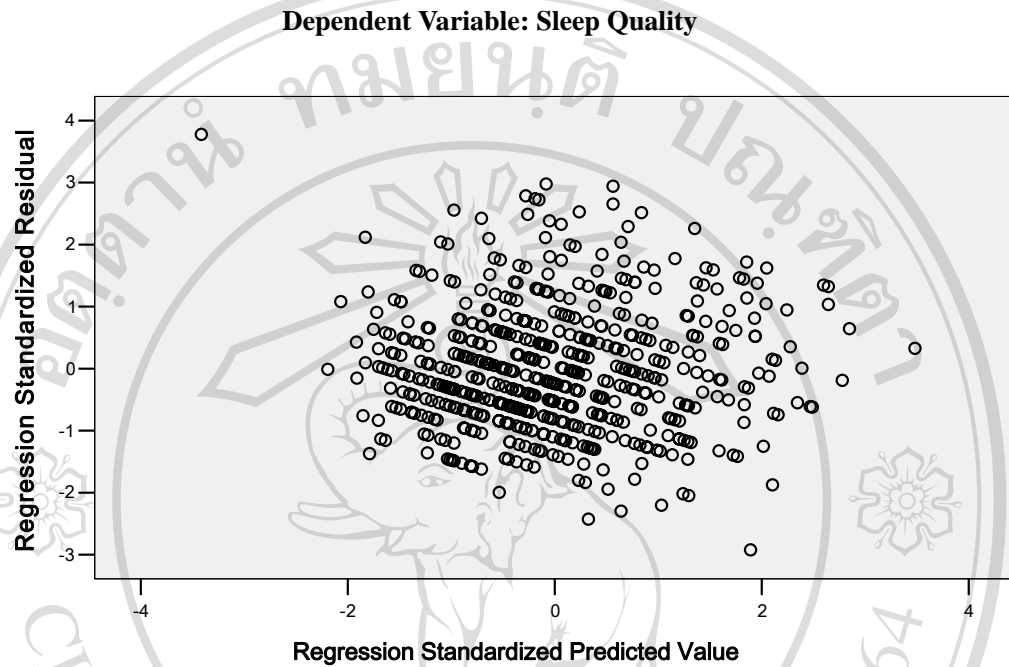


Scatterplot

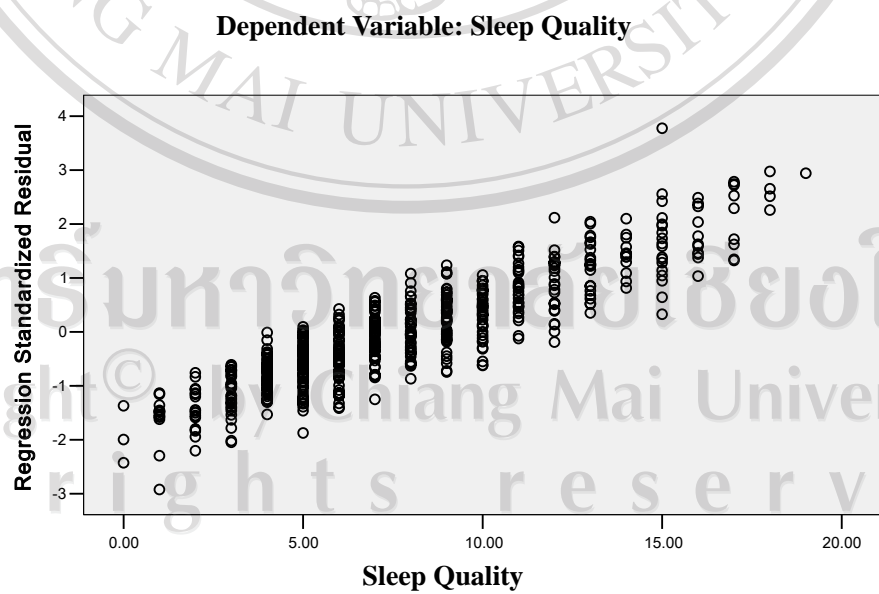


Predictors: Shift work, Job control, Job demand, Support at work, Exposure to Hazards in Hospital Work Environments

Scatterplot



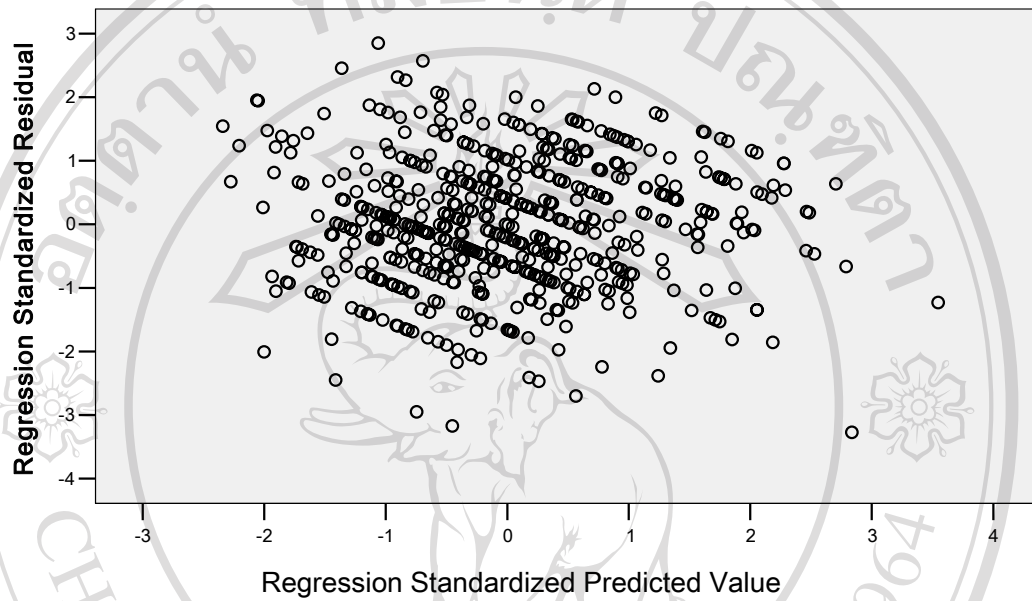
Scatterplot



Predictors: Shift work, Job control, Job demand, Support at work

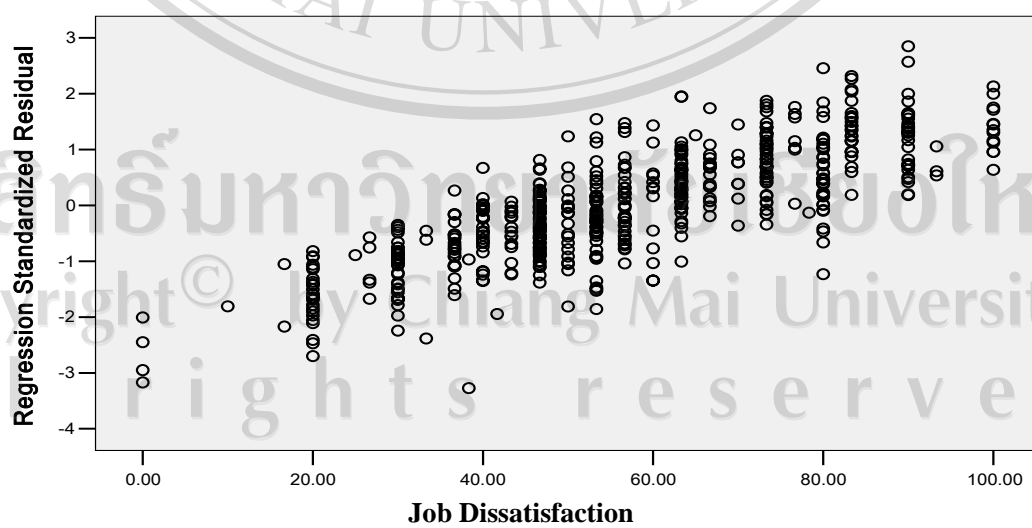
Scatterplot

Dependent Variable: Job Dissatisfaction



Scatterplot

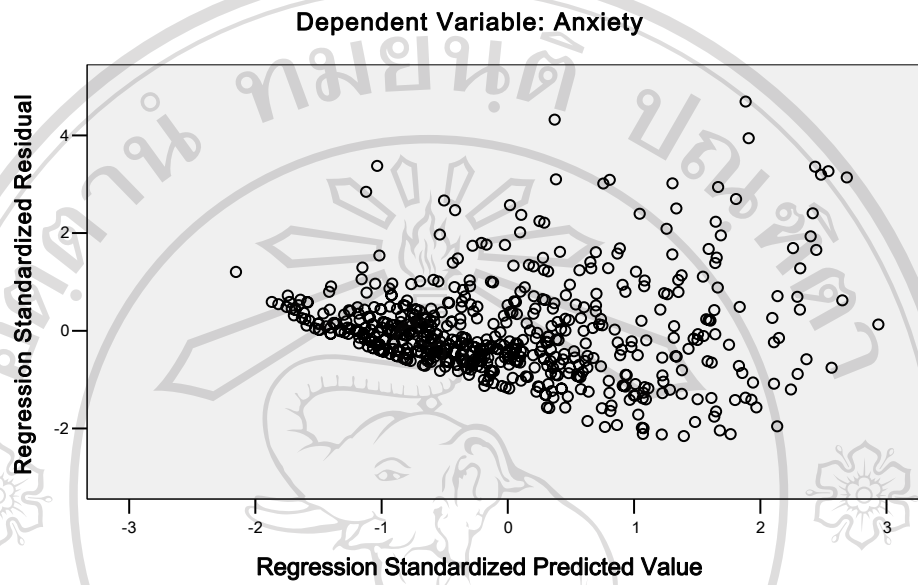
Dependent Variable: Job Dissatisfaction



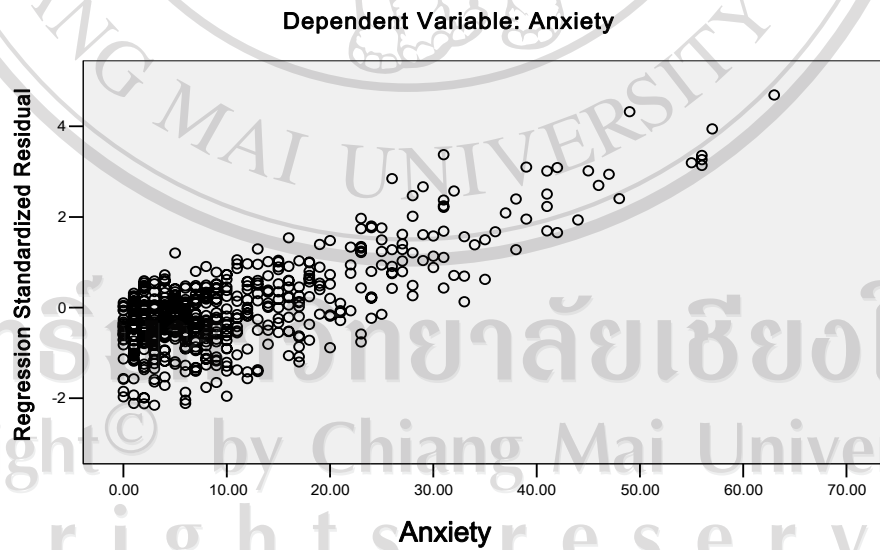
Predictors: Shift work, Job control, Job demand, Support at work, Exposure to Hazards in Hospital Work Environments



Scatterplot

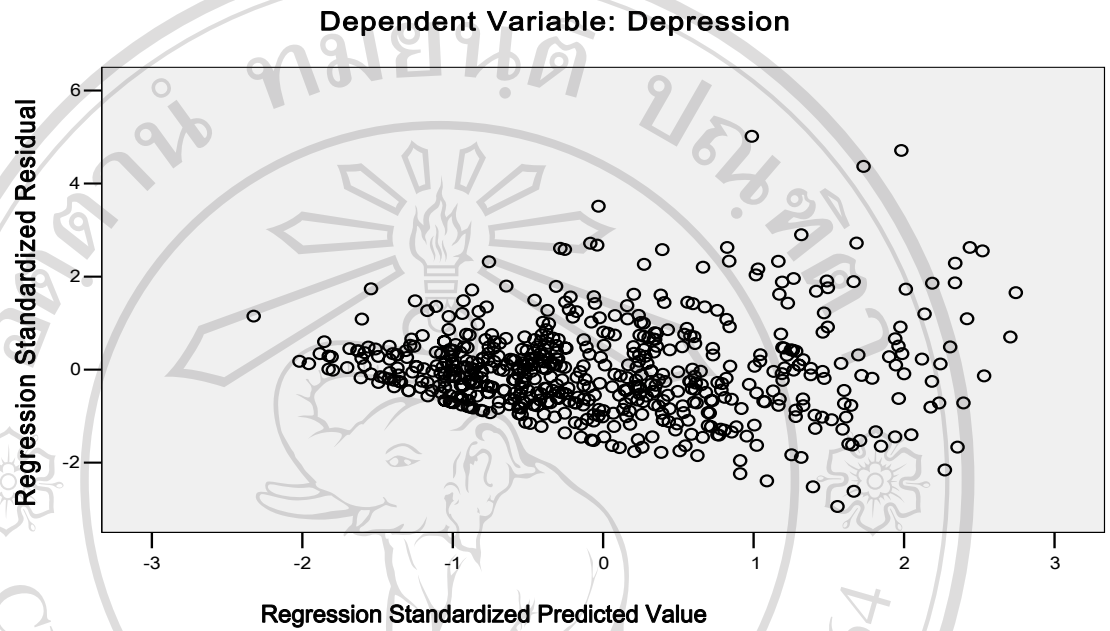


Scatterplot

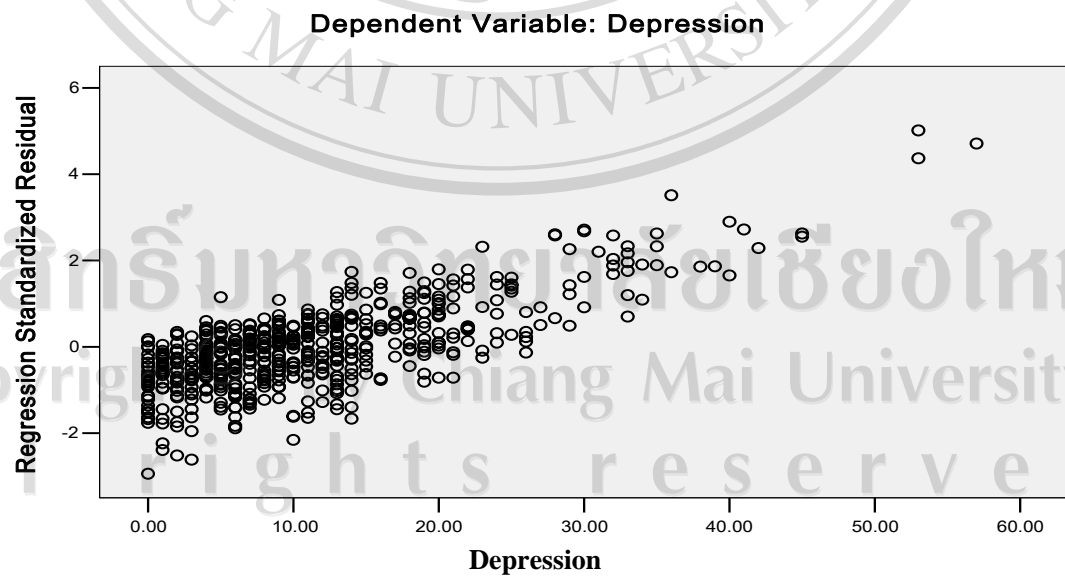


Predictors: Sleep quality, Shift work, Job control, Job demand, Support at work,  
Job dissatisfaction

Scatterplot



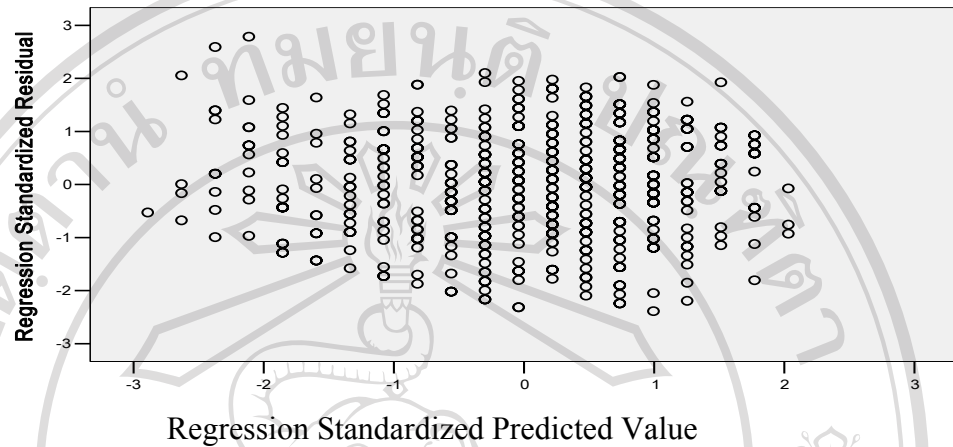
Scatterplot



Predictors: Sleep quality, Shift work, Job control, Job demand, Support at work,  
Job Dissatisfaction

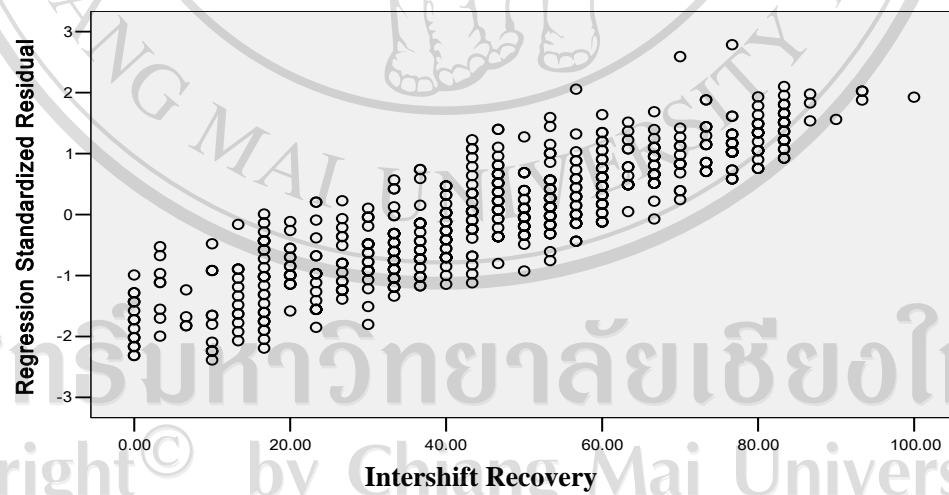
Scatterplot

Dependent Variable: Intershift Recovery



Scatterplot

Dependent Variable: Intershift Recovery



Predictor: Sleep quality

### Curriculum Vitae

<b>Name</b>	Mrs. Fang Jinbo
<b>Gender</b>	Female
<b>Name of workplace</b>	Huaxi Hospital, Sichuan University in Sichuan, P.R.China
<b>Contact address</b>	No.78, Guoxue Lane, Chengdu 610041, P.R. China
<b>Professional position</b>	Lecturer
<b>Education experience</b>	
2005-2008	Doctor of Philosophy (Nursing) Faculty of Nursing, ChiangMai University, in Thailand (Jan-May, 2007 Studied at University of Alberta, in Canada)
1999-2002	Master of Nursing Science (Medical and Surgical Nursing) Xi'an Communication University, China
1993-1998	Bachelor of Nursing Science, Huaxi Medical University, Chengdu, P.R.China
<b>Clinical experience</b>	
2004-2005	Head Nurse, Surgical Department in Huaxi Hospital, Chengdu City, China.
<b>Teaching experience</b>	
2003-the present	Part-time teacher, School of Nursing, Sichuan University
<b>Research area</b>	Nursing administration; Surgical nursing