

## APPENDIX A

## Research plan

Visit	1	2	3	4
Week	-4	0	4	8
Criteria diagnosis IHS	x			
Diary of mobile phone use dosage form		x	x	
Screening form for depressive disorder		x		
Inclusion criteria		x		
Exclusion criteria		x		
Inform consent		x		
Background information	x			
Physical and neurological examinations	x	x	x	x
Vitals signs	x	x	x	x
Weight	x	x	x	x
Headache questionnaire 1	x			
Headache questionnaire 2		x	x	x
Hospital Anxiety and Depression Scale form		x	x	x
Patient diary: - number of migraine attacks - intensity - severity - number of days with acute migraine medication use	x	x	x	
Investigator global assessment of change		x	x	x
Patient global assessment change		x	x	x

**APPENDIX B**

**Calendar of visit**

HN: .....ID: .....Age.....year Tel: .....

Visit No./date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
<input type="checkbox"/> 1																														
<input type="checkbox"/> 2																														
<input type="checkbox"/> 3																														
<input type="checkbox"/> 4																														

**Medication use for acute attack**

**Medication use for preventive therapy**

No.	Medicine
1	
2	
3	
4	
5	
6	

No.	Medicine
1	
2	
3	
4	
5	
6	

## APPENDIX C

## Study protocol

1. Calendar of visit
2. Research plan
3. IHS diagnostic criteria for migraine
4. Inclusion - exclusion criteria
5. Information sheet for patients
6. Informed consent

No.	Information	Visit 1	Visit 2	Visit 3	Visit 4
1	Questionnaire 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Headache diary and intensity form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Physical examination form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Screening form for depressive disorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Questionnaire 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Hospital Anxiety and Depression Scale form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Diary of mobile phone use dosage form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Assessment form for each visit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## APPENDIX D

### IHS diagnostic criteria

#### 1.1 Migraine without aura

- A. At least 5 attacks fulfilling B though D
- B. Headache lasting 4-72 hr
- C. At least two of the following characteristics:
  1. Unilateral location
  2. Pulsating quality
  3. Moderate or severe intensity
  4. Aggravation by walking stairs or similar routine physical activity
- D. During headache at least 1 of the following:
  1. Nausea and/or vomiting
  2. Photophobia and phonophobia

#### 1.2 Migraine with aura

- A. At least 2 attacks fulfilling B
- B. At least 3 of the following 4 characteristics:
  1. One or more fully reversible aura symptoms indicating focal cerebral cortical and/or brain stem dysfunction.
  2. At least one aura symptom develops gradually over more than 4 minutes or, 2 or more symptoms occur in succession.
  3. No aura symptom last more than 60 minutes. If more than one aura symptom is present, accepted duration is proportionally increased.
  4. Headache follows aura with a free interval of less than 60 minutes. (It may also begin before or simultaneously with the aura)

**APPENDIX E****Consent form**

I am Mr. / Mrs. / Miss. ....  
 volunteer and accept to participate in the study on the topic of Mobile Phone Exposure as a Risk Factor of Migraine: An Intervention Study in Vientiane Municipality, Lao PDR. The Principle Investigator, Dr. Somchit Vorachit explained or I have already read the information about the present study.

The Principle Investigator has agreed to answer every question which I would have all the time during my participation in the study. The Principle Investigator confirmed that she would keep my personal data confidential and would demonstrate the data in summary report and general form of research. The investigator will not do anything which will harm me or my mind during my participation in the study and proves that if there is any harm as a direct results of this study, I will receive appropriate treatment.

I agree to join the study voluntarily and I understand that I am able to withdraw from this study at any time without any effect on my treatment including other health services that I should normally be entitled to. If I have any illness and in the case there are any queries or problems which I would like to consult with the investigator, I can contact with Dr. Somchit Vorachit at phone number 5418052 at all time.

Signature ..... Volunteer  
 (.....)  
 Date...../...../.....

Signature ..... Wife/husband/relatives  
 (.....)  
 Date...../...../.....

Signature ..... Investigator  
 (.....)  
 Date...../...../.....

Signature ..... Witness  
 (.....)  
 Date...../...../.....

ID: .....  
 HN: .....  
 Tel: .....

## APPENDIX F

### Information sheet for patients

**Topic of the present study:** Mobile Phone Exposure as a Risk Factor of Migraine:  
An Intervention Study in Vientiane Municipality, Lao  
PDR

**Supported a grant by:** Graduate School, Chiang Mai University

**Main investigator:** Somchit Vorachit M.D

You were diagnosed with migraine. I am Dr. Somchit Vorachit and investigator of the present study. So I would like to invite you to participate in this study project. You will have time to read the information about this study (or the investigator read it and explains to you in the case you are illiterate). If you have any queries about the study, please ask the investigator directly who can give more information about this study. If you decide to join in this study, you would not only receive this information sheet, you would also receive a signed copy of the consent form.

#### What is this research about?

Migraine is a common primary episodic headache which sometimes can have a large impact on the patients' quality of life. Migraine treatment consists of abortive and preventive treatments and the latter can help prevent recurrent headache, decrease headache frequency, duration and severity. On the other hand, migraine could be aggravated or precipitated by various precipitating factors such as smell, noise, stress, certain kinds of food, weather, inadequate sleep, travel and menstruation. Migraine treatment therefore involves in the avoidance of these precipitating factors and the use of medications with the aim to improve the quality of life.

In a study in Singapore in 2000 about the effect of mobile phone use and central nervous system symptoms, the results showed that there was a significant increase in the prevalence of headache with increasing duration of mobile phone use in minutes per day. In contrast, prevalence of headache was reduced by more than 20% among those who used hand-free equipment for their cellular telephone as compared to those who never used hand-free kits. However, this study design is only an observation and first study regarding this issue. At present, there is no study that further investigate the proposed negative effect of mobile phone on its users in terms of the precipitation of migraine headache. Therefore, the aim of the present study is to

investigate the effect of mobile phone use and migraine headache. If we find out a significant association of mobile phone use and migraine headache, then we will be able to apply the results of the study into the clinical practice for migraine treatment by advising migraine patients appropriately in terms of mobile phone use. Hence, treatment for migraine will have better benefit besides the use of medication alone. There will be about 50 patients participating in this study and you are one of them.

### **Educational advantages**

1. To find out the effect of mobile phone use and migraine headache.
2. To guide proper migraine treatment, besides the use of medication alone.

### **What are you expected to do during the study?**

If you decide to join this study, you will be invited to sign a consent form in order to display your agreement for being a volunteer to participate in the study (study period is about 12 weeks since a screening phase, intervention phase and complete follow-up for all visits).

During your first visit, investigator will interview you about your illness history and do physical examination. Then, you will receive headache diary and mobile phone use diary according to the investigators' advices.

You will meet the investigator for 4 times, which each interval period about 4 weeks in order to have physical examination and evaluation the primary outcomes including number of migraine attacks, number of days with migraine attack, total intensity scores, total severity scores, total duration scores, number of acute medication and number of days with acute medication, and secondary outcomes such as patient's global assessment, investigator's global assessment and number of responders with treatment. You will receive headache diary and mobile phone use diary every time except the final visit. Before, you will come back to see the investigator next time, please complete your headache diary and mobile phone use diary note.

In the second visit, you have to bring headache diary and mobile phone use diary with you, investigator will do physical examination for you again. If you are matched inclusion criteria of the study, you will random to receive intervention. If you are in group A, you will receive hand-free equipment for mobile phone use in your habit. You should use hand-free kit for your mobile phone every time when you are talking on the phone about 4 weeks by keeping the mobile phone in the position lower or equal to the lumbar level. (Please give us strongly cooperation at this point) If you are in group B, you will not receive hand-free kit for your mobile phone in the sequence 1 and you still have normal use of your mobile phone in this phase about 4 weeks.

In the third visit, you have to bring headache diary and mobile phone use diary with you again and investigator will also repeat physical examination and evaluate a

change of frequency, duration and severity of headache. Later, if you already received hand-free kit for your mobile phone in sequence 1, you have to discontinue using hand-free kit for your mobile phone every time when you are talking on the phone about 4 weeks in sequence 2. If you did not receive hand-free kit for your mobile phone in sequence 1, you will receive it in sequence 2 and you should use hand-free kit for your mobile phone every time when you are talking on the phone about 4 weeks by keeping the mobile phone in the position lower or equal to the lumbar level. (Please give us strongly cooperation at this point)

In the final visit, you have to bring headache diary and mobile phone use diary with you again and investigator will also repeat physical examination and evaluate a change of frequency, duration and severity of headache. This will be the final phase and the last follow-up in this study.

**Precaution:** When you participate in this study during 12 weeks, please use your mobile phone in your habit normally and do not be cautious about the use of mobile phone might have a negative impact on your migraine headache. This is because at present, there has not been any study that confirms that mobile phone use is a trigger factor for migraine headache. Therefore, you should not be too concern as by doing so it would affect the results of the study.

#### **A risk from participation in this study**

**Despite being an** experimental study, hand-free equipment for mobile phone in general has been proven to be safe and have been widely used. Therefore, subjects in this study are not at risk.

#### **What benefits will you get from the study?**

You do not have any extra payment from participation the study and you will receive hand-free kit use for your mobile phone without any payment and also the treatment course in acute phase, because the investigator will take responsibility for this part. The results of the study which you have one part of it, this will be a great benefit to improve migraine treatment in order to help other migraine patients to have better quality of life in the future.

#### **Payment for participation in the study**

Other payment which does not relate with the current study such as medicine and other health services from normal system, you will receive it according your health insurance that you have in each hospital.

#### **How much fee will you get?**

You will not receive any fees from participating in this study except hand-free equipment use for your mobile phone and treatment course in acute phase.



### **What happen if you get any harm from the participation of the study**

There is no any harm from participation in this study, even the study is experimental study. But the intervention use is proved to be safety and will not harm on human health.

### **Other choices**

You can refuse to participate in this study, but you still receive a normal treatment for migraine headache from other doctors in the hospital.

### **What do you do if you do not want to participate in the study or change your mind during the study?**

You can decide to join or refuse participation in this study. If you already joined in this study, you can drop out from the study all the times and your decision will not affect with your treatment or other health services in the future.

### **Who will know about your participation in the study?**

There are only an investigator, a nurse, and a doctor who take care of you to know that you join in this study.

### **Data protection: what data will be collected from this study?**

Data will not refer to your name in the report or publication if you decide to participate in this study:

1. Your personal data examination and analysis use only for a clinical research and there are only investigator and team to perform these data.
2. Your personal data which you do not want other to know, these will be kept in concealed.
3. The results of the study will not have any impact for patients.

### **Who can you contact with if you have any questions about this study?**

If you have any questions or worry about the study, please contact with Dr. Somchit Vorachit at the phone number 020-5418052.

## APPENDIX G

### The Questionnaire From For Survey Migraine Headache in Vientiane Municipality, Lao PDR (No.1)

**Attention:** Please mark a symbol x in the empty box in front of the selected answer

#### I. Demographic data

1. Gender  Male  Female

2. Age.....

3. Educational Levels

Illiterate

Secondary

University

Primary school

College

Post graduate

4. Occupations

Unemployed

Housewife

Soldier/police

Worker

Governmental staff /enterprise/company

Student

Trader

Other.....

5. Status

Single

Married

Other.....

Divorce

Widow

#### II. Information about past history of headache

6. Have you ever had characteristic of headache like this before?

Yes

No

7. How old did you start to have headache characteristic like this? .....year

8. This time, how long do you present headache? .....days.....months.....year

ID: .....

HN: .....

Date: .....

9. Your family member such as father, mother, brother and sister, is there anyone in your family having headache like this?

- Yes       No

**III. Information about present history of headache**

10. Which area do you start having headache? And which side?

Location	Right	Left	Bilateral	Change side
<input type="checkbox"/> Occipital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Orbital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Temporal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Central head	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. From the beginning of pain, which areas does your headache radiate to?  
(Please fill the ordinal number according to the areas of headache radiation)

- Occipital  
 Orbital  
 Temporal  
 Central head

12. How is your headache characteristic? Such as:

- Throbbing pain  
 Sharp shooting pain  
 Dull/tight/heavy ache  
 Other.....

13. Do you have any symptoms (aura) before your headache?  
(If the answer is no, please across to answer the question 15<sup>th</sup>)

- Yes       No

14. What is your aura symptom before your headache? Such as:

- Scotoma  
 Paraesthesia around the hand and mouth in a while  
 Weakness or ataxia in a while  
 Dysarthria or aphasia in a while  
 Other.....

ID: .....  
 HN: .....  
 Date: .....

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15. While you are having headache, do you have these symptoms or not? Such as:

- |  |   |
|--|---|
| <input type="checkbox"/> Nausea/vomiting         | <input type="checkbox"/> Photophobia    |
| <input type="checkbox"/> Phonophobia             | <input type="checkbox"/> Blurred vision |
| <input type="checkbox"/> Dizziness               | <input type="checkbox"/> Vertigo        |
| <input type="checkbox"/> Disturb sleep time      |   |
| <input type="checkbox"/> Tenderness of muscle at | ( ) Occipital                           |
|  | ( ) Neck                                |
|  | ( ) Shoulder                            |
| <input type="checkbox"/> Other.....              |   |

16. How often do you have headache attacks per week?

- 1-3 times  
 3-5 times  
 > 5 times  
 Everyday

17. How long do you have headache per attack?

- < 15 min  
 15 min – 3 hr  
 4 - 72 hr  
 > 72 hr

18. Does your headache associated with physical activities? Such as:

- Walking or go up the stairs  
 Head down or movement  
 Menstruation ( ) Before.....days  
( ) During.....days  
( ) After.....days

19. What is your headache severity?

- Mild (can stand the pain)  
 Moderate (have to take medication to relief pain)  
 Severe(have to take medication to relief pain and have to take a rest or go to the hospital)

20. What conditions do you do for release your pain? Such as:

(If the answer is no taking medicine, please across to answer the question 22<sup>nd</sup>)

- Takes a rest or sleep  
 Massage  
 Taking medicine for release pain  
 Other.....

ID: .....  
HN: .....  
Date: .....

21. What kind of medicine do you previously use for your headache? Such as:

- Cafergot
- NSAID (diclofenac, ibrufen.....)
- Paracetamol
- Other.....

22. Do you have daily use other medicine at the present?  
(If the answer is no, please across to answer the question 24<sup>th</sup>)

- Yes
- No

23. Do you have underlying disease?  
(If the answer is no, please across to answer the question 25<sup>th</sup>)

- Yes
- No

If the answer is yes, please select the answer following as:

- Hypertension (HT)
- Cerebral Vascular Accident (CVA)
- Diabetes (DM)
- Dyslipidemia
- Cardiovascular disease
- Other.....

24. What other medicine do you have a daily use at the present? Such as:

- Oral contraceptive as: .....
- Antihistamine as: .....
- Antihypertensive drugs as: .....
- Cardiovascular drugs as: .....
- Other drugs as: .....

25. Did you have a previous history of seizure from fever?

- No
- Yes at age.....year

26. Did you use to have head trauma?

- No
- Yes when.....month.....year

ID: .....  
HN: .....  
Date: .....

#### IV. Information about mobile phone use

27. How often do you use mobile phone per day?

- 1-5 times
- 6-10 times
- 11-15 times
- 16-20 times

28. How long do you talking on the mobile phone per each time?

- 1-5 min
- 6-10 min
- 11-15 min
- 16-20 min
- 21-25 min
- 26-30 min
- 31-60 min
- > 60 min

29. What brand of mobile phone do you use? And which model?

- Nokia Model.....
- Motorola Model.....
- Sony Ericson Model.....
- Samsung Model.....
- Immobile Model.....
- Other..... Model.....

30. What the system of mobile phone do you use?

- GSM
- ETL
- Tigo
- Star phone

31. Did you previously use hand-free kit for your mobile phone?

(If the answer is no, please across to answer the question 33<sup>rd</sup>)

- Yes
- No

32. At the present if you do not use hand-free kit, how long did you stop to use it?

- 1 week
- > 1 week
- 1 month
- > 1 month
- 1 year
- > 1 year

ID: .....  
 HN: .....  
 Date: .....

33. Which side do you hold on the phone?

- Left side
- Right side
- Both sides

#### V. Information about trigger factors for migraine

34. These factors, could stimulate you to have migraine headache? Such as:

- Stress
- Lack of sleep
- Long travel
- Weather
- Smell
- Some kinds of food
- Other.....

35. What kind of food or drink is able to stimulate you to have migraine? Such as:

- Cheese/yogurt
- Chocolate
- Tea/coffee/Coca-Cola
- Onion
- Peanut
- Pork/chicken liver
- Synthetic sugar
- Some kind of fruits such as: orange, avocado, banana.....
- Food with much seasoning powder such as: china food.....
- Alcohol drinking such as: beer, red wine.....

36. Did you drink a coffee in a previous month?

(If the answer is no, please across to answer the question 38<sup>th</sup>)

- Yes
- No

37. How many cubs of coffee did you think per day (150ml/cub)?

- 1 cub
- 2 cubs
- 3 cubs
- > 3 cubs
- Other.....

ID: .....  
 HN: .....  
 Date: .....

38. Did you drink alcohol in a previous month?

(If the answer is no, please across to answer the question 39<sup>th</sup>)

- Yes       No

39. How many glasses of alcohol did you drink per day (200ml/glass)?

- 1-2 glasses       3-4 glasses  
 5-6 glasses       > 6 glasses  
 Other.....

40. Did you smoke in a previous month?

(If the answer is no, please across to answer the question 42<sup>nd</sup>)

- Yes       No

41. How many cigarettes did you smoke per day?

- 1-3 cigarettes       4-6 cigarettes  
 7-8 cigarettes       9-12 cigarettes  
 > 12 cigarettes

42. Do you use microwave in your habit?

(If the answer is no, please across to answer the question 44<sup>th</sup>)

- Yes       No

43. How many times do you use microwave per day?

- < 1 hr       1 hr  
 2 hr       3 hr  
 > 3hr

44. Do you listen to the MP3 in your habit?

(If the answer is no, please across to answer the question 46<sup>th</sup>)

- Yes       No

45. How many hours do you listen to the MP3 per day?

- < 1 hr       1 hr  
 2 hr       3 hr  
 > 3hr

ID: .....

HN: .....

Date: .....



46. Do you use a computer in your habit?

(If the answer is no, please across to answer the question 48<sup>th</sup>)

- Yes       No

47. How many hours do you use a computer per day?

- < 1 hr       1-2 hr  
 3-4 hr       5-6 hr       > 6 hr

48. Do you watch television (TV) in your habit?

(If the answer is no, please across to answer the question 50<sup>th</sup>)

- Yes       No

49. How many hours do you watch TV per day?

- < 1 hr       1 hr  
 2 hr       3 hr       > 3hr

50. Did you have stress in a previous month?

- Yes       No

51. Did you lack of sleep in a previous month?

- Yes       No

52. Did you have a long travel > 6 hr in a previous month?

- Yes       No

53. Was your headache stimulated by smell in a previous month?

- Yes       No

54. Was your headache stimulated by weather in a previous month?

- Yes       No

ID: .....

HN: .....

Date: .....

**The Questionnaire From For Survey Migraine Headache in Vientiane Municipality, Lao PDR (No.2)**

**Attention:** Please mark a symbol x in the empty box in front of the selected answer

1. How often do you have headache attacks per week in a previous month?

- 1-3 times
- 3-5 times
- > 5 times
- Everyday

2. How long do you have headache per attack in a previous month?

- < 15 min
- 15 min – 3 hr
- 4 - 72 hr
- > 72 hr

3. What is your headache severity in a previous month?

- Mild (can stand with pain)
- Moderate (have to take medicine for release pain)
- Severe(taking medicine for pain and have to take a rest or go to the hospital)

4. What kind of food or drink was able to stimulate you to have migraine headache in a previous month? Such as:

- Cheese/yogurt
- Chocolate
- Tea/Coca-Cola
- Onion
- Peanut
- Pork/chicken liver
- Synthetic sugar
- Some kind of fruits such as: orange, avocado, banana.....
- Food with much seasoning powder such as: china food.....

5. Did you drink a coffee in a previous month?

(If the answer is no, please across to answer the question 7<sup>th</sup>)

- Yes
- No

ID: .....

HN: .....

Date: .....

D0  D30  D60



14. How many hours do you listen to the MP3 per day?

- < 1 hr                       1 hr  
 2 hr                               3 hr                               > 3hr

15. Do you use a computer in your habit?  
 (If the answer is no, please across to answer the question 17<sup>th</sup>)

- Yes                       No

16. How many hours do you use a computer per day?

- < 1 hr                               1-2 hr  
 3-4 hr                               5-6 hr                               > 6 hr

17. Do you watch television (TV) in your habit?  
 (If the answer is no, please across to answer the question 19<sup>th</sup>)

- Yes                               No

18. How many hours do you watch TV per day?

- < 1 hr                               1 hr  
 2 hr                                       3 hr                                       > 3hr

19. Did you have stress in a previous month?

- Yes                               No

20. Did you lack of sleep in a previous month?

- Yes                               No

21. Did you have a long travel > 6 hr in a previous month?

- Yes                               No

22. Was your headache stimulated by smell in a previous month?

- Yes                               No

23. Was your headache stimulated by weather in a previous month?

- Yes                               No

ID: .....  
 HN: .....  
 Date: .....  
 D0  D30  D60

**APPENDIX H**

**Physical examination form**

Visit day:  D0  D30  D60 Date: ...../...../.....

Vital signs

HN: ..... ID: .....

SBP: / ____ / ____ / ____ / mmHg	DBP: / ____ / ____ / ____ / mmHg
Pulse: / ____ / ____ / ____ / beats/min	Body Weight: .....Kg

**Physical and neurological examination**

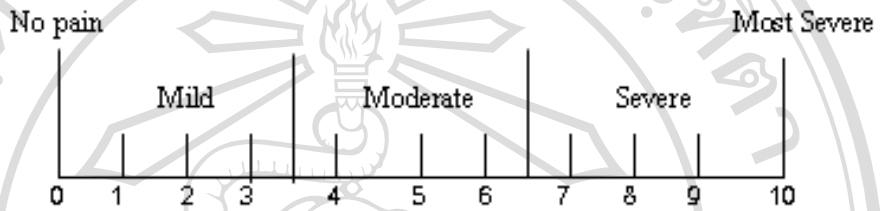
Organ system	Normal	Abnormal	Not done	Symptom/diagnosis
Skin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Eyes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Ear/nose/throat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Lungs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Heart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Lymph nodes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Gastro-intestinal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Liver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Uro-genital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Neurologic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Extremities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
<b>Other, please specify:</b>	1..... ..... ..... 2..... ..... .....			
.....				
.....				



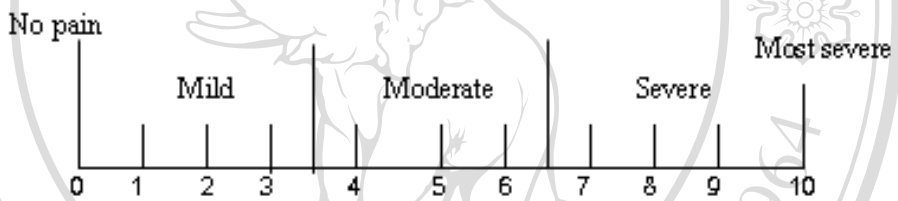
**Assessment Form for Intensity Scores of Headache**

Please mark a circle at the Intensity Scores of Headache score which matched your headache severity during a past week following as 0 – 10

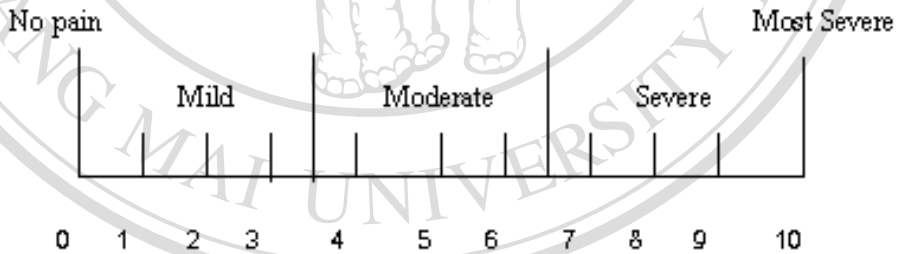
Date ..... (Week 1)



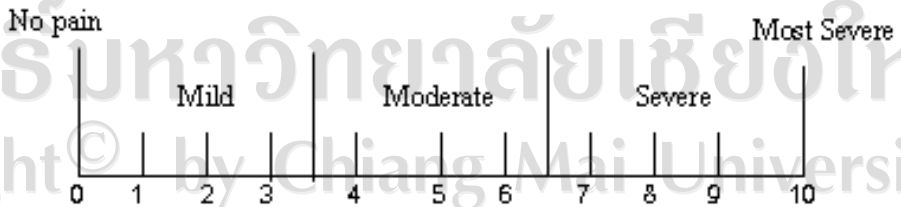
Date ..... (Week 2)



Date ..... (Week 3)



Date..... (Week 4)



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ID: .....  
 HN: .....  
 D0  D30  D60  
 Date: ...../...../2007

**APPENDIX J**

**Diary of mobile phone use form**

Please note the time period and frequency that you spend on using the mobile phone per day in minutes for a one-month period

(HN ..... ID..... Date...../...../2007,  D0  D30  D60)

Time	1-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-1	1-2	2-3	3-4	4-5	5-4
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## APPENDIX K

## Hospital anxiety and depression scale form

The psychiatric aspects in patient care are essential for health care workers to improve their understanding on the impact by the patients' illness. The aim of this questionnaire is to assist health care workers to record the psychological impact of headache in your daily life.

Please read each choice in the questionnaire and mark a symbol ✓ in the empty box in front of the answer, which reflects closest to the way you feel during a past week. Please answer every question.

		Scores			Scores
1. I feel tense or 'wound up':			2. I still enjoy the things I used to enjoy:		
<input type="checkbox"/> Most of the time	3		<input type="checkbox"/> Definitely as much	0	
<input type="checkbox"/> A lot of the time	2		<input type="checkbox"/> Not quite so much	1	
<input type="checkbox"/> From time to time, Occasionally	1		<input type="checkbox"/> Only a little	2	
<input type="checkbox"/> Not at all	0		<input type="checkbox"/> Hardly at all	3	
3. I get a sort of frightened feeling as if something awful is about to happen:			4. I can laugh and see the funny side of things:		
<input type="checkbox"/> Very definitely and quite badly	3		<input type="checkbox"/> As much as I always could	0	
<input type="checkbox"/> Yes, but not too badly	2		<input type="checkbox"/> Not quite so much now	1	
<input type="checkbox"/> A little, but it doesn't worry me	1		<input type="checkbox"/> Definitely not so much now	2	
<input type="checkbox"/> Not at all	0		<input type="checkbox"/> Not at all	3	
5. Worrying thoughts go through my mind:			6. I feel cheerful:		
<input type="checkbox"/> A great deal of the time	3		<input type="checkbox"/> Not at all	3	
<input type="checkbox"/> A lot of the time	2		<input type="checkbox"/> Not often	2	
<input type="checkbox"/> From time to time, but not too often	1		<input type="checkbox"/> Sometimes	1	
<input type="checkbox"/> Only occasionally	0		<input type="checkbox"/> Most of the time	0	

Scores		Scores	
7. I can sit at ease and feel relaxed:		8. I feel as if I am slowed down:	
<input type="checkbox"/> Definitely	0	<input type="checkbox"/> Nearly all the time	3
<input type="checkbox"/> Usually	1	<input type="checkbox"/> Very often	2
<input type="checkbox"/> Not Often	2	<input type="checkbox"/> Sometimes	1
<input type="checkbox"/> Not at all	3	<input type="checkbox"/> Not at all	0
9. I get a sort of frightened feeling like 'butterflies' in the stomach:		10. I have lost interest in my appearance:	
<input type="checkbox"/> Not at all	0	<input type="checkbox"/> Definitely	3
<input type="checkbox"/> Occasionally	1	<input type="checkbox"/> I don't take as much care as I should	2
<input type="checkbox"/> Quite Often	2	<input type="checkbox"/> I may not take quite as much care	1
<input type="checkbox"/> Very Often	3	<input type="checkbox"/> I take just as much care as ever	0
11. I feel restless as I have to be on the move:		12. I look forward with enjoyment to things:	
<input type="checkbox"/> Very much indeed	3	<input type="checkbox"/> As much as I ever did	0
<input type="checkbox"/> Quite a lot	2	<input type="checkbox"/> Rather less than I used to	1
<input type="checkbox"/> Not very much	1	<input type="checkbox"/> Definitely less than I used to	2
<input type="checkbox"/> Not at all	0	<input type="checkbox"/> Hardly at all	3
13. I get sudden feelings panic:		14. I can enjoy a good book or radio or TV program:	
<input type="checkbox"/> Very often indeed	3	<input type="checkbox"/> Often	0
<input type="checkbox"/> Quite often	2	<input type="checkbox"/> Sometimes	1
<input type="checkbox"/> Not very often	1	<input type="checkbox"/> Not often	2
<input type="checkbox"/> Not at all	0	<input type="checkbox"/> Very seldom	3

## APPENDIX L

## Assessment form for each visit

HN: ..... ID: .....  D0  D30  D60

Summary of headache diary form (Date: ...../...../.....)

1. Number of migraine attacks since last visit:	/ / /
2. Number of migraine attack days since last visit:	/ / /
3. Total intensity score of all migraine attacks since last visit:	/ / /
4. Number of migraine severity from migraine attacks since last visit:	
Mild	/ / /
Moderate	/ / /
Sever	/ / /
5. Does the patient take a treatment for migraine attacks:	<input type="checkbox"/> YES <input type="checkbox"/> NO
6. Number of migraine attacks with acute migraine medication use:	/ / /
7. Number of days with acute migraine medication use:	/ / /

## Global assessment change judged by the patient

Score of global assessment change:	/ / /
-3 = very much improved	+3 = mild deteriorated
-2 = much improved	+2 = much deteriorated
-1 = mild improved	+1 = very much deteriorated
0 = no change	

## Global assessment change judged by the investigator

Score of global assessment change:	/ / /
-3 = very much improved	+3 = mild deteriorated
-2 = much improved	+2 = much deteriorated
-1 = mild improved	+1 = very much deteriorated
0 = no change	

## APPENDIX M

Table 4.7 Mean difference of carry over effect

Carry over effect	Between sequences	Mean diff.(95%CI)	P-value
1. Number of migraine attacks	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-0.7(-2.2; 0.6) -0.5(-1.7; 0.7)	0.28 0.4
2. Number of days with migraine attack	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	2.7(-2.5; 7.9) 4.4(-1.4; 10.4)	0.3 0.13
3. Total intensity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-4.1(-11.1; 2.8) -4.7(-12.4; 2.9)	0.23 0.22
4. Total severity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	47.8(-97.1; 192.9) 74.7(-51.8; 201.4)	0.5 0.23
5. Total duration scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	55.3(-47.1; 157.7) 78.1(-22.7; 179)	0.28 0.12
6. Acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-6.8(-11.7; -2) -0.9(-5.4; 3.4)	0.007 0.66
7. Days with acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-2.9(-5.4; -0.4) -0.6(-3.1; 1.8)	0.02 0.61
8. Patient's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	0.9(0.03; 1.8) 0.5(-0.2; 1.3)	0.04 0.13
9. Investigator's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	0.9(0.07; 1.8) 0.5(-0.2; 1.3)	0.03 0.15

**Table 4.8 Mean difference of treatment effect**

<b>Treatment effect</b>	<b>Between sequences</b>	<b>Mean diff.(95%CI)</b>	<b>P-value</b>
1. Number of migraine Attacks	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-0.3(-1.1; 0.5) 0.05(-0.9; 1)	0.46 0.91
2. Number of days with migraine attack	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-0.9(-3.7; 1.7) -0.7(-3; 1.4)	0.47 0.48
3. Total intensity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	2.1(-3.3; 7.6) -1.5(-6.2; 3.1)	0.44 0.5
4. Total severity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	3.2(-56.5; 63) -30.1(-74.8; 14.5)	0.91 0.18
5. Total duration scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-2.3(-45.4; 40.8) -20.4(- 49.3; 8.3)	0.91 0.16
6. Acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-4(-7.9; -0.09) -1.8(-5; 1.3)	0.04 0.24
7. Days with acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-1.4(-3.5; 0.6) -0.8(-2.6; 0.9)	0.17 0.34
8. Patient's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-0.06(-0.5; 0.4) 0.4(-0.2; 1)	0.77 0.19
9. Investigator's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	-0.02(-0.4; 0.4) 0.4(-0.1; 1)	0.91 0.15

**Table 4.9 Mean difference of period effect**

<b>Period effect</b>	<b>Between sequences</b>	<b>Mean diff. (95%CI)</b>	<b>P-value</b>
1. Number of migraine attacks	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>-0.7(-2.2; 0.6)</li> <li>-0.5(-1.7; 0.7)</li> </ul>	<ul style="list-style-type: none"> <li>0.2</li> <li>0.4</li> </ul>
2. Number of days with migraine attack	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>2.7(-2.5; 7.9)</li> <li>4.4(-1.4; 10.4)</li> </ul>	<ul style="list-style-type: none"> <li>0.3</li> <li>0.1</li> </ul>
3. Total intensity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>-4.1(-11.1; 2.8)</li> <li>-4.7(-12.4; 2.9)</li> </ul>	<ul style="list-style-type: none"> <li>0.2</li> <li>0.2</li> </ul>
4. Total severity scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>47.8(-97.1; 192.9)</li> <li>74.7(-51.8; 201.4)</li> </ul>	<ul style="list-style-type: none"> <li>0.5</li> <li>0.2</li> </ul>
5. Total duration scores	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>55.3(-47.1; 157.7)</li> <li>78.1(-22.7; 179)</li> </ul>	<ul style="list-style-type: none"> <li>0.2</li> <li>0.1</li> </ul>
6. Acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>-6.8(-11.7; -2)</li> <li>-0.9(-5.4; 3.4)</li> </ul>	<ul style="list-style-type: none"> <li>0.007</li> <li>0.6</li> </ul>
7. Days with acute medication	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>-2.9(-5.4; -0.4)</li> <li>-0.6(-3.1; 1.8)</li> </ul>	<ul style="list-style-type: none"> <li>0.02</li> <li>0.6</li> </ul>
8. Patient's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>0.9(0.03; 1.8)</li> <li>0.5(-0.2; 1.3)</li> </ul>	<ul style="list-style-type: none"> <li>0.04</li> <li>0.1</li> </ul>
9. Investigator's global assessment	<ul style="list-style-type: none"> <li>▪ Baseline*sequence1</li> <li>▪ Sequence 1*sequence 2</li> </ul>	<ul style="list-style-type: none"> <li>0.9(0.07; 1.8)</li> <li>0.5(-0.2; 1.3)</li> </ul>	<ul style="list-style-type: none"> <li>0.03</li> <li>0.1</li> </ul>

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- Asian and Oceanian Symposium on Clinical Neurophysiology, Chiang Mai, Thailand
- Annual meeting of Neurological Society of Thailand
- 21<sup>st</sup> Annual Scientific Meeting, The Royal College of Physicians of Thailand April 23 – 27 , Ambassador City Jomtien, Cholburi, Thailand
- ASNA workshop on CNS infection in Vientiane, Lao PDR from 8-9 December

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- Workshop on Update CNS Infection (Faculty of Medicine, CMU)
- Workshop on Data Management in Health Sciences (Faculty of Sciences, CMU)
- Annual meeting of Neurological Society of Thailand
- The 2<sup>nd</sup> Asian Headache Foundation and 3<sup>rd</sup> Northern Neuroscience

Center Meeting: Pitfalls in Pain Management, December 14-15,

2006 at Lotus Hotel Pang Suan Kaew, Chiang Mai, Thailand



2007 Participated in:

- Binomial conference of ASEAN Neurological Association 2007:  
Towards Better Neurological Health Care in Southeast Asia in March  
7-9, 2007 at Regent Beach Cha-Am Hotel, Phetchburi, Thailand
- 23<sup>rd</sup> Annual Scientific Meeting, the Royal College of Physicians of  
Thailand at Ambassador City Jomtien, Cholburi, Thailand.

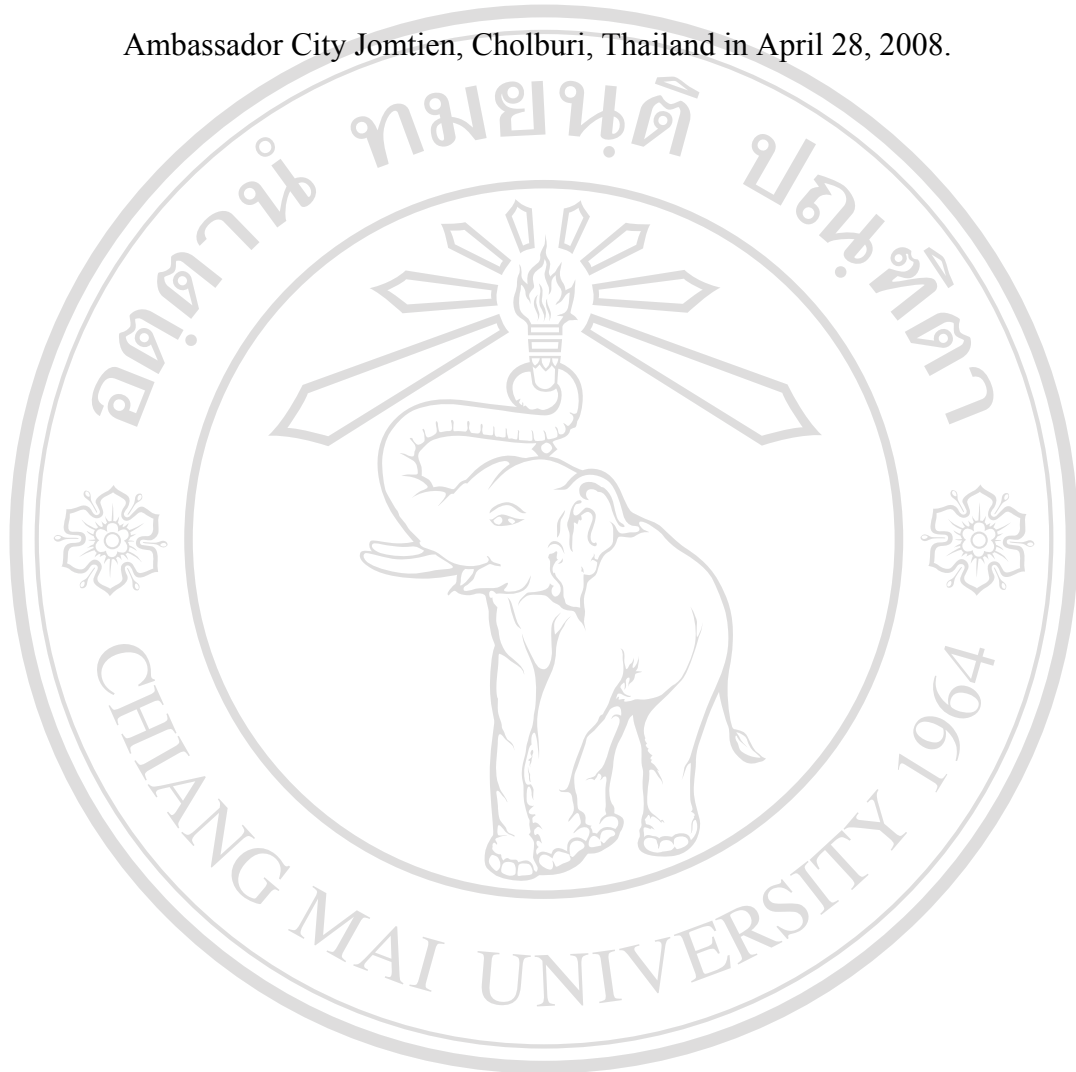
2008 Participated in:

- Annual meeting of Neurological Society of Thailand: Dilemma in  
Neurology March 5-7, 2008 at Pullman Bangkok King Power,  
Bangkok, Thailand.
- 24<sup>th</sup> Annual Scientific Meeting, the Royal College of Physicians of  
Thailand at Ambassador City Jomtien, Cholburi, Thailand.

**Presentation:**

1. S Chankrachang , S Vorachit , N Tiya Pun, K Tongprasert , T Ratana : The  
clinical , Laboratory and radiological Profiles of tuberculous meningitis in  
Patients with and without HIV infection in Chiang Mai University  
Hospital, presented at annual meeting of the Neurology Society of  
Thailand in March, 2005 and presented in the 10<sup>th</sup> Anniversary and Higher  
Education Forum of National University of Laos in 2006, and poster  
presented at annual meeting of Chiang Mai University in 2005.
2. S Vorachit, S Chankrachang, S Chariyalertsak, C Kingkeow: Mobile Phone  
Exposure as a Risk Factor of Migraine: An Intervention Study in  
Vientiane Municipality, Lao PDR, presented at annual meeting of the

Neurology Society of Thailand in March 7, 2008 and presented at 24<sup>th</sup> Annual Scientific Meeting, the Royal College of Physicians of Thailand at Ambassador City Jomtien, Cholburi, Thailand in April 28, 2008.



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