Reliability and Validity of Migraine Disability Assessment Questionnaire-Thai Version (Thai-MIDAS)

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Objective: To assess the validity and test-retest reliability of a Thai translation of the Migraine Disability Assessment (MIDAS) Questionnaire in Thai patients with migraine.
Material and Method: Migraineurs from the Headache Clinic in Siriraj Hospital were recruited and asked to complete a 13-weeks diary and answered the Thai-MIDAS at once. Some participants were asked to provide the 2nd Thai-MIDAS in the next 2 weeks for test-retest reliability.
Results: Ninety-three patients had completed the 13-weeks diaries. Age range was 18-58 years with mean 37.69 ± 9.60 years. All 5 items and the total score of Thai-MIDAS were moderately correlated with data from 13-weeks diary (Spearman's correlation coefficient = 0.32-0.62). The test-retest reliability of the total score of Thai-MIDAS in 30 patients demonstrated a highly reliable degree of intraclass correlation (ICC = 0.76, 95%CI 0.49-0.88).
Conclusion: The present study reveals that the Thai-MIDAS has satisfactory validity and reliability in comparison with the original English MIDAS version.

Keywords: Migraine, Migraine disability assessment

Migraine is a common debilitating neurological condition characterized by episodic attacks that typically manifest themselves as moderate to severe headaches. Associated symptoms often include nausea and vomiting, photophobia, phonophobia, and perhaps aura, resulting in disability and compromised function in a substantial proportion of patients. Migraine impacts patients and their families and results in functional impairment, both during and between attacks. The overall prevalence of migraine in the United States of America (USA) was 11.7% and in community of Thailand was 29.1%. Females tend to experience migraine more often than males. The common age group is between 30 and 39 years of age[1,2]. The increasing number of migraine sufferers in the USA suggested that the burden of migraine remains substantial despite decades of progress[3]. In England, it was estimated that 5.7 working days were lost per year for each working or student migraineur[4]. Moreover, the burden of migraine not only impaired and limited productivity of work or school, but also time missed from family or social occasions. Therefore, migraine is an important public health problem in many countries, associated with very substantial costs. Physicians should consider the frequency and intensity of headache to effectively determine the impact of migraine and stratify patients to appropriate care. Because the severity of migraine varies considerably among individuals, patients with migraine have varying medical care needs.

The assessment of disability of the patients with migraine is an important factor which enables physicians to define treatment need and strategies. Many questionnaires have been developed to help the physicians to assess migraine-related disability. The Migraine Disability Assessment (MIDAS) questionnaire was first reported in 1999 by the group of Lipton and Stewart; it serves as a screening tool to improve physician-patient communication and helps identify patients in need of urgent medical care. It is also an

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outcome measure for emidemiological research, clinical trial and practice[5].

MIDAS is a seven-item self-administered questionnaire (Table 1). The questions included five disability-related questions covering the previous 3-months period, and each of these questions can have possible scores ranging from 0 to 90. The two additional questions are not scored, but these questions inquire about number of days with headaches and average pain level associated with headaches over the previous 3-months. Previous studies showed that the English-original version of the MIDAS is a reliable and valid instrument for the assessment of the migraine-related disability[6,7], as well as the Italian[8], Japanese[9], Turkish[10] and Taiwanese[11] versions. The reliability and internal consistency were similar to the previous Headache Impact Questionnaire[5], and showed that headache frequency and pain intensity increased significantly with increasing MIDAS grade[12]. The MIDAS score correlates strongly with the severity of a patient's condition and supports clinical judgment regarding the option of medical care along with treatment outcomes[13,14]. MIDAS has been consequently recommended as an instrument for public health initiatives which aim to reduce the burden of migraine[5,15].

To maintain the usefulness of the MIDAS and to allow reference among physicians and researchers from different health care providers, it is important to have a standardized version, particularly when translated into another language. In Thailand, although it has been used inclinical practice for years, there have neverbeen any studies to validate the Thai version of the MIDAS in migraine patients who might have different activities and cultures from those of the West. The objectives of the present study are therefore to translate the MIDAS into Thai language by using a standard method and to test its reliability and validity.

Material and Method

The present study was supported by the Routine to Research Management Fund, Faculty of Medicine Siriraj Hospital, Mahidol University and was conducted between October 2010 to September 2011 after approval from the Siriraj Institutional Review Board. The translation processes were also kindly permitted by the original developer (Walter F. Stewart)[6].

Translation of the original MIDAS into Thai language

The translation of the English version of the MIDAS questionnaire which was used in this study followed standardized processes. These processes

Table 1. Original version MIDAS Questionnaire

MIDAS Questionnaire
INSTRUCTIONS: Please answer the following questions about ALL your headaches you have had over the last 3 months. Write your answer in the box next to each question. Write zero if you did not do the activity in the last 3 months.

1. On how many days in the last 3 months did you miss work or school because of your headaches?		.........days
2. How many days in the last 3 months was your productivity at work or school reduced by half or more because of your headaches? (Do not include days you counted in question 1 where you missed work or school)		.........days
3. On how many days in the last 3 months did you not do household work because of your headaches?		.........days
4. How many days in the last 3 months was your productivity in household work reduced by half or more because of your headaches? (Do not include days you counted in question 3 where you did not do household work)		.........days
5. On how many days in the last 3 months did you miss family, social or leisure activities because of your headaches?		.........days
	Total	.........days
A On how many days in the last 3 months did you have a headache? (If a headache lasted more than 1 day, count each day)		.........days
B On a scale of 0–10, on average how painful were these headaches? (Where 0 = no pain at all, and 10 = pain as bad as it can be)		…………..

started from the translation of the ESS English version into Thai by three translators who are fluent in English and do not participate in the present study, including one professional translator from a university. One of these translated versions was blindly selected with total agreement by the research committees, which are composed of medical specialists, and translated back into English by another professional translator for comparison. This process was repeated until the selected final English version is as close as possible in vocabulary and meaning to the original. The final Thai version was then tested in a small group of subjects and minimally adjusted before applying it to the larger study groups.

Subjects

All migraine sufferers who visited the headache clinic of Siriraj Hospital from October 2010 to September 2011 were eligible for the present study. Written informed consent was obtained before any data were collected. Because migraine in students or the working population has high prevalence, only migraine patients aged 18-60 years were selected. The participants must be able to read and complete the questionnaires by themselves. The diagnosis of migraine was based on the 2nd Edition of The International Classification of Headache Disorders (2004). Subjects were excluded if they had a history of currently taking sedative drugs, alcohol or opioid derivatives. Those who had other comorbidities such as cerebrovascular disease, intracranial tumor or psychiatric problem were also excluded.

The recording of demographic data and headache characteristic was done in the first visit. All the potential subjects were asked to complete the daily headache diary for 13 weeks. Each diary booklet covered a one-week period and contained three pages for each day of the week. Information recorded in the diary was divided in 2 parts. The first part included information about work, household work productivity, mood and stress, menstrual status (females only) and whether they had headache pain. Specific information recorded in the second part involved headache features and intensity, disability and measurement of how much productivity was reduced from attending work or school, disability with regard to measurement of housework performance and disability with regard to participation in family and leisure activities.

Study participants were asked to return the diaries at a return visit or in a reply-paid envelope at the end of each month. The participants were contacted by telephone to ascertain the status of the missing diary if they did not return a completed diary within 7 days of the due date. At the end of the 13-weeks diary period, all participants were asked to complete the first Thai MIDA Sand all participants were asked to make a further visit to complete the second Thai MIDAS Questionnaire at the end of 15th week.

Statistical analysis

Sample sizes were planned as follows. For validity, 85 patients would provide 80% power to detect the moderate correlation ($r = 0.3$) between the Thai-MIDAS score and the sum of reduced productivity across all days and the method of analysis is a bivariate correlation test with a 0.05 two-sided significance level. For reliability, 29 patients were needed to complete the second Thai-MIDAS. These would provide two-sided confidence level of 0.95 to detect expected interclass correlation of 0.8 for 5 raters. Intraclass correlation coefficient was used as the index of the internal consistency with accepted values of 0.7 or higher for Thai MIDAS score.

The validity of Thai-MIDAS

The equivalent measures derived from 13-weeks diary data was the "gold standard" for assessing the validity of the MIDAS items and the Thai MIDAS score. The validity was assessed using correlations between total MIDAS scores and the equivalent composite measured summarized from the 13-weeks diary. Mean and median values for MIDAS scores and 13-weeks diary items were compared using Wilcoxon signed-rank test, paired-t-test and Spearman's correlation coefficient.

The reliability of Thai-MIDAS

The correlations of MIDAS score at the end of 13nd week and 15th week were considered. Intraclass correlation coefficients were calculated between the overall Thai MIDAS score to assess the degree to which responses to the first and second questionnaires were related.

All data were entered by an investigator into a computer database and re-entered for verification. Statistical analysis was carried out using SPSS version 16.0 for Windows (SPSS Inc, Chicago, IL, USA).

Results

A total of 130 eligible patients with migraine met the inclusion criteria and were enrolled into the present study. Three patients did not provide

demographic data and were omitted from the analysis, resulting in a sample of 127 patients who participated in the validity study. All participants initially enrolled invalidity portion of the study and 34 (26.77%) were excluded from the analysis. Of these, 5 (3.93%) had returned an incomplete 13-weeks headache diary, 1 (0.79%) did not provide the Thai-MIDAS, and 28 (22.05%) were lost to follow-up. As a result, the total number of participants for analysis was 93 and 82 of them (88.17%) were female. The mean age was 37.69 ± 9.60 years. The demographic data is shown in Table 2.

Validity
Spearman correlation coefficient was used to assess the correlation of scores in each item of the first Thai-MIDAS and its equivalent item from 13-weeks diary data. Since all of the scores from 5 items in Thai-MIDAS (ThM1-ThM5) correlated with scores from the 13-weeks diary data (the correlation coefficient ranged from 0.32 to 0.50), the total Th-MIDAS score (Sum-ThM) and the number of days significantly affected with headache (D7) were positively correlated ($r = 0.62$) (Table 3).
The mean number of ThM1 and ThM5 score from Thai-MIDAS was more than the mean number of

D1 and D5 score from diary measurement and the mean number of ThM2 and ThM4 score from Thai-MIDAS was less than number of D2 and D4 score from diary measurement, but none of these had significance ($p > 0.05$). Only one item, the mean number of M3 score from Thai-MIDAS was significantly more than D3 score from diary data ($p < 0.01$). Finally, the mean number of total Thai-MIDAS was not significantly different from the sum score of total days affected by headache (D7), as a headache day was counted as a day if productivity at work, school and in household was reduced by a half or more (mean 19.3 ± 23.01 versus 16.77 ± 25.3) ($p = 0.31$). The mean difference of total days significantly affected by headache (D7) and Thai-MIDAS score was 2.53 days (from diary based data, the mean difference was less than from Thai-MIDAS). In general, the data shows that there were no significant differences between the mean from total Thai-MIDAS and the mean from the number of days significantly affected by headache (D7) derived from the 13-weeks diary.

Test-retest reliability
The intraclass correlation coefficient was used to analyze the score from each question and total Thai-MIDAS in the first and second assessment. The mean

Table 2. Demographic data of 93 participants

Demographic data and headache characteristics of 93 participants	n (%)
Age and gender	
Mean age (years $\pm$ standard deviation)	37.69 ± 9.6
Median age in years (min, max)	38 (18,58)
Female	82 (88)
Headache characteristics	
Throbbling	64 (68.82)
Tighting	8 (8.60)
Others	3 (3.23)
Mixed	18 (19.35)
Pain intensity	
Mild	27 (29.03)
Moderate	49 (52.69)
Severe	17 (18.28)
Presence of nausea and/or vomiting	57 (61.29)
Aura	
No	75 (80.65)
Visual aura	13 (13.98)
Sensory aura	3 (3.23)
Others	2 (2.15)
Duration of headache in average (regardless of treatment)	
< 4 hours	54 (58.06)
4 hours-3 days	27 (29.03)
> 3 days	12 (12.90)

Table 3. Correlation coefficients of Thai-MIDAS obtained at the end of the diary period (13th week) and equivalent questions derived from the headache diary

Thai-MIDAS equivalent item	ThM Mean (SD)	Equivalent diary measures	Diary Mean (SD)	p-value[#]	Correlation Coefficient[*]
1. On how many days in the last 3 months did you miss work or school because of your headaches? (ThM1)	2.57 (4.85)	Days missed work or school for all day (D1)	1.78 (2.72)	0.42	0.32
2. How many days in the last 3 months was your productivity at work or school reduced by half or more because of your headaches? (Do not include days you counted in question 1 where you missed work or school) (ThM2)	4.83 (6.86)	Days productivity at work or school was reduced by half or more (D2)	5.39 (10.35)	0.50	0.41
3. On how many days in the last 3 months did you not do household work because of your headaches? (ThM3)	3.68 (5.19)	Days missed household work for all day (D3)	1.78 (2.81)	< 0.001	0.43
4. How many days in the last 3 months was your productivity in household work reduced by half or more because of your headaches? (Do not include days you counted in question 3 where you did not do household work) (ThM4)	4.38 (6.10)	Days productivity in household work was reduced by half or more (D4)	5.20 (11.03)	0.55	0.42
5. On how many days in the last 3 months did you miss family, social or leisure activities because of your headaches? (ThM5)	3.85 (5.31)	Days missed leisure (D5)	2.72 (4.45)	0.04	0.50
A. On how many days in the last 3 months did you have a headache? (If a headache lasted more than 1 day, count each day) (ThM6)	27.44 (28.18)	Total days with migraine (D6)	26.87 (34.78)	0.20	0.74
B. On a scale of 0–10, on average how painful were these headaches? (Where 0 = no pain at all, and 10 = pain as bad as it can be) (ThM7)	5.80 (0.86)	Average pain intensity of all migraine (D6)	5.40 (1.31)	0.02	0.74
MIDAS Score (Sum ThM)	19.30 (23.01)	Days counted as a day if productivity at work, school and in household was reduced by half or more (D7)	16.77 (25.30)	0.31**	0.62

Wilcoxon signed-rank test, *Spearman's rank correlation coefficient, ** paired-t-test

Table 4. Thai Migraine Disability Assessment (MIDAS) Data from Test-Retest Reliability Study

Thai-MIDAS equivalent item	1st assessment Mean (SD)	2nd assessment Mean (SD)	ICC**	95% CI
1. On how many days in the last 3 months did you miss work or school because of your headaches? (ThM1)	2.47 (4.55)	1.53 (2.93)	0.63	0.22-0.82
2. How many days in the last 3 months was your productivity at work or school reduced by half or more because of your headaches? (Do not include days you counted in question 1 where you missed work or school) (ThM2)	4.03 (4.49)	4.60 (4.51)	0.58	0.12-0.80
3. On how many days in the last 3 months did you not do household work because of your headaches? (ThM3)	3.60 (5.44)	3.03 (4.51)	0.76	0.49-0.89
4. How many days in the last 3 months was your productivity in household work reduced by half or more because of your headaches? (Do not include days you counted in question 3 where you did not do household work) (ThM4)	3.63 (5.26)	3.07 (3.89)	0.82	0.62-0.91
5. On how many days in the last 3 months did you miss family, social or leisure activities because of your headaches? (ThM5)	3.23 (4.54)	3.10 (4.30)	0.62	0.20-0.82
Total Th-MIDAS	17.00 (19.94)	15.33 (15.67)	0.76	0.49-0.88
A. On how many days in the last 3 months did you have a headache? (If a headache lasted more than 1 day, count each day) (ThM6)	16.93 (15.58)	13.17 (15.01)	0.70	0.36-0.85
B. On a scale of 0-10, on average how painful were these headaches? (Where 0 = no pain at all, and 10 = pain as bad as it can be) (ThM7)	5.50 (2.57)	4.73 (1.93)	0.77	0.51-0.89

** Intraclass correlation coefficient

age of 30 patients recruited in test-retest group is 38.13 $\pm$ 9.61 years. The age range was 18 to 56 years. There were 27 (90%) women in the test-retest group. The mean scores of total Thai-MIDAS in the first and second test were 17 $\pm$ 19.94 and 15.33 $\pm$ 15.67, respectively. The mean score of each question and total Thai-MIDAS score are shown in Table 4. Among 30 patients, the test-retest reliability of total Thai-MIDAS score was 0.76, 95% CI 0.49-0.88, by intraclass correlation. The mean total number of days affected with headache, from additional question A in first and second assessment of Thai-MIDAS, were 16.93 $\pm$ 15.58 and 13.17 $\pm$ 15.01, respectively; the intraclass correlation coefficient was 0.70, 95% CI 0.36-0.85. For the score of average pain intensity from additional question B, the mean of pain intensity expressed by numerical scale score in the first assessment is 5.50 $\pm$ 2.57 and 4.73 $\pm$ 1.93 for the second trial; and the intraclass correlation coefficient was 0.77, 95% CI 0.51-0.89.

Discussion

In the present study, there were more females than males and that corresponded to the higher prevalence of migraine in females[1,2]. Mean age of recruited patients (n = 93) was 37.69 years with minimal and maximal ages of 18 and 58 years. This result was also compatible with the high prevalence of migraine in adult age. One half of the studied patients had mild pain intensity and 20% had aura (Table 2).

Since the present study demonstrated a good correlation between Thai-MIDAS response and the 13-weeks diary database, the validity of Thai-translation of the MIDAS questionnaire was satisfactory in comparison of the original English MIDAS questionnaire. The number of days severely affected by headache from diary-based data was moderately correlated with the total MIDAS score from the 1st MIDAS with a correlation coefficient 0.62 (Spearman's rank). This result was similar to the validated testing of

the English MIDAS questionnaire[7]. The significant difference (p < 0.01, Wilcoxson sign ranked-test) was shown in only ThM3 from Th-MIDAS and D3 scores from 13-weeks diary data, that is, the number of days missed from household work. The meaning of household work was likely varied among Thai individuals, and this variation may explain the significant difference between ThM3 and D3. However, there were no significant differences in the other 4 items of Th-MIDAS and in the data from the 13-weeks diary (p > 0.01). Furthermore, the paired-t-test was used to estimate the difference in total Thai-MIDAS score and total days from diary based data, so there was no significant difference from the gold standard diary based measurement. Therefore, in comparison with the diary based data measurement, the Thai-MIDAS is concurrently valid. The study also demonstrated a high level of number of days with headache from both Thai-MIDAS and from 13-weeks diary (29.3 and 16.77 days, respectively) that indicated severely functional impairment from migraine. Therefore, it appears to be that our participants were the migraineurs who really needed treatment.

Previous studies[9-11] showed good reliability of test-retest for MIDAS in many languages that was similar to the high correlation (Spearman's rank = 0.84 and Pearson's rank = 0.75) of original English MIDAS[6]. The reliability of Thai-MIDAS in the present study was evaluated and the result was similar to the original English MIDAS[6] and those in the other languages[9-11]. Both total Thai-MIDAS score and scores from additional questionnaires were not significantly different in the pairing of 1st and 2nd Thai-MIDAS test. The intraclass correlation coefficient was 0.76 for total Thai-MIDAS score, compared between the two Thai-MIDAS examinations that revealed high degree of correlation. Similarly, the intra class correlation coefficients were moderately high for the two additional questions, being 0.70 and 0.77 for question A and B. Therefore, the total Thai-MIDAS score had high degree of reliability.

Three limitations of this study should be noted. Firstly, a total of 130 eligible cases were enrolled into the study, but 37 participants were excluded. The drop-out rate was 28% and that was rather high. However, it was within the acceptable range of 30%. Secondly, the 30 participants were recruited in the reliability test without an appropriate selection tool. However, they seemed to have the same characteristics in sex and age in the validity group and the reliability group. Thirdly, the present study did not explore some

characteristics of the participants such as educational level, socioeconomic status that may be the confounding factors for the data of 13-weeks diary used to be the 'gold standard', and the 13-weeks diary was not validated beforehand. However, the data of migraine disability was quite subjective information, but there were no other standard objective tools with which to compare the validity. In addition, the previous studies also used the headache diary to be the 'goal standard' of the validity test[7,9]. Therefore, it was agreed that in this kind of study, 'headache diary' was currently appropriate as the 'gold standard' for a validity test.

Conclusion

The present study demonstrates the validity of the translation of MIDAS questionnaire to the Thai-version, and this is the first valid test of MIDAS questionnaire for Thai people. Moreover, the present study reveals that the Thai-MIDAS has satisfactory validity and reliability in comparison with the original English MIDAS version.

Clinical impact

The Thai-MIDAS could be a practical instrument to assess headache-related disability and ensure cross-cultural relevance. The Thai-MIDAS may also help the physician to easily communicate with the Thai migraineurs as it is a self-administered questionnaire. In addition, the physician may use the Thai-MIDAS to categorize the patient and provide suitable treatment for the individual.

Potential conflicts of interest

None.

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แบบสอบถาม *MIDAS QUESTIONNAIRE* ฉบับภาษาไทย (Appendix1)

โปรดตอบคำถามที่เกี่ยวกับอาการปวดศีรษะที่เป็นอยู่ทุกครั้งของท่านในช่วง 3 เดือนที่ผ่านมาเขียนคำตอบลงในช่อง
ที่ติดกันของแต่ละคำถาม ถ้าท่านไม่ได้ทำกิจกรรมนั้นๆ ในช่วง 3 เดือนที่ผ่านมานี้ให้ใส่เลข "0" ในช่องดังกล่าว

คำถาม	คำตอบ
1.ในช่วงระยะเวลา 3 เดือนที่ผ่านมา มีกี่วันที่คุณขาดงานหรือหยุดเรียนเนื่องจากการปวดศีรษะ	_____วัน
2. ในช่วงระยะเวลา 3 เดือนที่ผ่านมา มีกี่วันที่ประสิทธิภาพในการทำงานหรือการเรียน *ของคุณลดลงครึ่งหนึ่ง หรือมากกว่าเนื่องจากการปวดศีรษะ* *(ไม่รวมวันที่คุณหยุดงานหรือขาดเรียนในข้อ 1.)*	_____วัน
3. ในช่วงระยะเวลา 3 เดือนที่ผ่านมามีกี่วันที่คุณหยุดทำงานบ้านเนื่องจากอาการปวดศีรษะ	_____วัน
4. ในช่วงระยะเวลา 3 เดือนที่ผ่านมามีกี่วันที่ประสิทธิภาพในการทำงานบ้านลดลงมากกว่า *ครึ่งหนึ่งหรือมากกว่า เนื่องจากการปวดศีรษะ (ไม่รวมวันที่คุณหยุดทำงานบ้านในข้อ 3.)*	_____วัน
5. ในช่วงระยะเวลา 3 เดือนที่ผ่านมา มีกี่วันที่คุณไม่สามารถทำกิจกรรมร่วมกับ *ครอบครัว เข้าสังคม หรือพักผ่อนหย่อนใจเนื่องจากการปวดศีรษะ*	_____วัน
คะแนนรวม	_____วัน
A. ในสามเดือนที่ผ่านมาคุณปวดศีรษะกี่วัน (ถ้าอาการปวดแต่ละครั้ง *นานกว่า 1 วัน ให้นับจำนวนวันที่มีอาการปวด)*	_____วัน
B. ถ้าให้คะแนนระดับการปวดศีรษะเป็นค่าตัวเลขจาก"0" *ถึง "10" คุณจะให้คะแนนระดับการปวดศีรษะโดยเฉลี่ยของคุณอยู่ที่เท่าใด* *(หาก"0" เท่ากับไม่ปวดเลย และ"10"เท่ากับปวดมากจนแทบทนไม่ได้)*	

ความเชื่อมั่นและความเที่ยงตรงของแบบประเมินความบกพร่องจากไมเกรนฉบับภาษาไทย

พิมาน สีทอง, อัครินทร์ นิมมานนิตย์, รังสรรค์ ชัยเสวิกุล, นาราพร ประยูรวิวัฒน์, วัฒนชัย โชตินัยวัตรกุล

วัตถุประสงค์: เพื่อประเมินความเชื่อมั่นและความเที่ยงตรงของแบบประเมินความบกพร่องจากไมเกรน ฉบับภาษาไทยในผู้ป่วยไมเกรนชาวไทย

วัสดุและวิธีการ: ผู้ป่วยไมเกรนในคลินิกโรคปวดศีรษะของโรงพยาบาลศิริราชจะได้รับการเลือกให้ทำการบันทึกอาการ ปวดศีรษะ ในช่วงเวลา 13 สัปดาห์เต็ม พร้อมกับตอบแบบประเมินความบกพร่องจากไมเกรนฉบับภาษาไทย เมื่อครบสัปดาห์ที่ 13 นอกจากนี้ผู้ป่วยส่วนหนึ่งจะได้รับการทดสอบแบบประเมินความบกพร่องจากไมเกรน ฉบับภาษาไทยซ้ำในอีก 2 สัปดาห์ถัดมา

ผลการศึกษา: ผู้ป่วยไมเกรน 93 ราย สามารถตอบแบบบันทึกอาการปวดศีรษะในช่วงเวลา 13 สัปดาห์ได้สมบูรณ์ ผู้ร่วมวิจัยมีอายุอยู่ในช่วง 18-58 ปี ค่าเฉลี่ยอายุที่ 37.69 ± 9.60 ปี คะแนนที่ได้จากคำถามทั้ง 5 ข้อและคะแนนรวม จากแบบประเมินความบกพร่องจากไมเกรนฉบับภาษาไทยมีความเที่ยงตรงสูงไปกันได้กับผลที่ได้ จากแบบบันทึก อาการปวดศีรษะในช่วงเวลา 13 สัปดาห์ โดยค่า Spearman's rank correlation coefficient อยู่ในช่วง 0.32-0.62 ส่วนค่าความเชื่อมั่นที่ได้ทดสอบในผู้ป่วย 30 ราย อยู่ในเกณฑ์สูงโดยมีค่า intraclass correlation อยู่ที่ 0.76 และช่วง ความเชื่อมั่นร้อยละ 95 อยู่ที่ 0.49-0.88

สรุป: แบบประเมินความบกพร่องจากไมเกรนฉบับภาษาไทยในผู้ป่วยไมเกรนชาวไทยให้ความเชื่อมั่นและ ความเที่ยงตรงสูงมากเมื่อเทียบกับต้นฉบับ