

Psoriasis Registry in Public Health Hospital

Rutsanee Akaraphanth MD*, Oraya Kwangsukstid MD*,
Pimonpun Gritiyarangsana MD*, Narumol Swanpanyalert MD**

* Institute of Dermatology, Department of Medical Services, Ministry of Public Health, Bangkok, Thailand

** Department of Medical Services, Ministry of Public Health, Bangkok, Thailand

Background: The Institute of Dermatology Thailand in cooperation with the hospitals across the country had conducted the psoriasis patient registry in Thailand between 2005 and 2008.

Objective: To explore the epidemiology of psoriasis, distribution of disease and type of psoriasis in Thailand, and establish the systematic psoriasis database in Thailand.

Material and Method: This patient registry recorded the demographic, severity and quality of life of psoriasis patients. The patients will be assessed for the severity and asked to complete the questionnaire only one time of enrollment.

Results: There have been 11,548 patients enrolled from 32 dermatological centers across Thailand. The male: female ratio was 1.3:1. The chronic plaque type is the majority of psoriasis type (85.6%). The average age of onset is 32.88 years and females have an earlier age of onset than males. Mostly is early onset type of psoriasis (64.2%). Head, body, and leg are the first three ranks of area of skin lesion at first onset. Twenty-five percent of patients have been rated as moderate-to-severe psoriasis as rated by BSA. Fifty-six point six percent of patients report that psoriasis has an impact to their quality of life. The most exacerbating factors are weather, stress, and alcohol drinking. About half of the population reported that they feel embarrassed and are distressed.

Conclusion: This registry establishes the first systematic psoriasis patient database in Thailand. With it, the epidemiology of psoriasis in Thailand is better understood.

Keywords: Psoriasis, Registry, Thailand

J Med Assoc Thai 2013; 96 (8): 960-6

Full text. e-Journal: <http://jmat.mat.or.th>

Psoriasis is a common chronic inflammatory disease of the skin, nails, and joints. The lifetime prevalence generally estimates at 1% to 3% of the general population but still varies in different populations and countries⁽¹⁻³⁾. Furthermore, it has been reported that the estimates prevalence vary by geographic location, more common in colder north than in the tropics⁽⁴⁾. Many publications reported that the psoriasis incidence has been increasing overtime^(5,6). To better understand the disease, many epidemiology studies and review articles had been published^(1,7-11). Nevertheless, even though many studies explored the epidemiology of psoriasis, a national psoriasis database should be available to better understand the exact epidemiology in a country.

Regarding this data gap, the Institute of Dermatology cooperated with Department of Health, Thailand and launched the psoriasis registry program

in 2005 to establish the local data and complete this data gap.

Material and Method

The thirty-two dermatological centers including hospitals, dermatological clinics and university hospitals had participated in the registry across Thailand. Each center had been requested to complete the questionnaire only one time for each psoriasis patient. The data collection form included age, age of onset, gender, marital status, educational level, career, type of psoriasis, distribution of skin lesions, exacerbating factors, comorbidities, patient's problem, previous treatment, and quality of life (QoL).

Specific dermatology quality of life questionnaire, Dermatology Life Quality Index (DLQI), had been employed in this registry. DLQI is a 10-item instrument measures symptoms (1 item), feeling (1 item), daily activities (2 items), leisure (2 items), work/school (1 item), relationship (2 items), and treatment (1 item), with each item graded on a Likert scale of 0 to 3 for a maximum score of 30⁽¹²⁾. The validated Thai language version was used⁽¹³⁾. Each

Correspondence to:

Akaraphanth R, 420/7 Rajvithi Road, Phayathai, Rajthevee, Bangkok 10400, Thailand.

Phone: 0-2354-8036

E-mail: akaraphanth@hotmail.com, onoinoi@yahoo.com

subject will be asked to complete the questionnaire only once at the time of enrollment.

The severity of disease had been measured by using 'Body Surface Area (BSA)' and 'Psoriasis Area and Severity Index (PASI)'. The investigator will assess the severity of psoriasis by rated affected body surface area and PASI only once at the time of enrollment. PASI is a calculation based on the severity grading of erythema, scaling, and induration of the four body areas, head, upper extremities, trunk, and lower extremities⁽¹⁴⁾.

For BSA, PASI, DLQI, exacerbating factors, nails abnormalities, comorbidities, previous treatment and patient's problems, the data were collected from the Institute of Dermatology only.

The data were collected between 2005 and 2008 and analyzed with SPSS 15.0 software (Serial number. 5078617). Demographic data were presented as the percentage, mean \pm SD depending on their distribution. Differences in continuous variables were calculated using the unpaired t-test. Discrete variables were analyzed using Chi-square test or Fishers' exact test as appropriate. A p-value less than 0.05 was set for statistical significance different.

Results

Population

The 11,548 psoriasis patients were enrolled in the registry from the Institute of Dermatology, together with five other hospitals in Bangkok and 26 public health regional hospitals from every part of Thailand between 2005 and 2008. Males (58%) were predominant over females (42%). The male: female ratio was similar for each region; north (1.3:1), central (1.4:1), east (1.2:1), northeast (1.3:1), south (1.4:1) and Bangkok (1.3:1) (no data presented). Demographic data is shown in Table 1.

Type of psoriasis

The majority of enrolled subjects had the chronic plaque type (85.6%), as shown in Table 2. In addition, the data had been shown that erythroderma type is common in males while pustular type occurred more often in females.

Age of onset

The age of onset ranged from one month to 87 years with the mean age of 32.88 years in the study population (35.33 for male and 29.41 for female). From further analysis, it had been found that the age of onset has statistical significant difference ($p < 0.001$) among

genders. In regarding the age of onset, Henseler and Christopher reported that there are two types of age of onset in Psoriasis; early and late onset⁽²⁾. The early onset is the psoriasis patients who had developed the first symptoms before 40 years old and late onset is the patients who had developed the first symptom after that. The difference of onset age was not found among the region as shown in Table 3.

Of the study population, the early onset type (64.2%) was predominantly over the late onset type (35.8%) (no data presented).

Twenty-one percent of subjects had a positive sibling history of psoriasis (Table 1). The data has shown that the subjects who had a sibling history of

Table 1. Demographic data

Item	n (%)
Age at enrollment date (year \pm SD)	43.76 \pm 15.84
Min-max	2 mo-98 yrs
Career (n = 11,217)	
Housekeeper	2,929 (26.11)
Civil servant	2,063 (18.39)
Business owner	1,422 (12.68)
Unemployed	1,228 (10.95)
Agriculture	1,132 (10.09)
Labor	1,136 (10.13)
Private company staff	852 (7.60)
Student	455 (4.06)
Educational level (n = 11,399)	
Primary school	4,604 (40.39)
Secondary school	2,701 (23.70)
Diploma	1,399 (12.27)
Vocational education	1,155 (10.13)
Bachelor or higher	1,149 (10.08)
None	327 (2.87)
Others	64 (0.56)
Marital status (n = 11,507)	
Married	7,389 (64.20)
Single	2,988 (25.90)
Divorced	437 (3.80)
Widow	351 (3.10)
Separated	250 (2.20)
Others	92 (0.80)
Smoking history (n = 551)	
Yes	244 (44.30)
No	307 (55.70)
Alcohol consumption history (n = 551)	
Yes	340 (61.70)
No	211 (38.30)
Sibling history of psoriasis (n = 11,260)	
Yes	2,363 (21.00)
No	8,897 (79.00)

Table 2. Type of psoriasis (n = 10,828)

Type	No. of patients	%	Mean age of onset (year ± SD)	% female	% male
Chronic plaque type	9,267	85.6	33.51±16.19	40.25	59.75
Guttate type	706	6.5	24.64±14.33	58.44	41.56
Scalp only	348	3.2	30.43±14.67	49.43	50.57
Erythroderma type	142	1.3	39.43±17.73	31.69	68.31
Palmoplantar type	108	1.0	36.98±20.18	44.44	55.56
Nail only	97	0.9	31.01±15.15	48.45	51.55
Pustular type	89	0.8	28.40±18.99	71.91	28.09
Inverse type	38	0.4	32.55±15.41	39.47	60.53
Psoriasis arthritis	33	0.3	35.43±16.05	36.36	63.64

Table 3. Age and age of onset in each region (n = 11,185)

Area	No. of patient	Age (year ± SD)	Age of onset (year ± SD)
North	1,353	43.55±14.84	34.96±18.02
Central	3,295	45.00±15.65	35.02±18.48
East	774	44.64±17.19	34.43±20.08
North east	2,246	42.28±14.34	33.36±16.76
South	1,793	44.40±17.26	34.23±20.84
Bangkok	1,690	42.16±16.17	33.79±19.36
Others	34	41.94±19.98	37.56±27.16

psoriasis, had an earlier age of onset with statistically significant difference ($p < 0.001$), as shown in Table 4.

Distribution of skin lesions of onset

The distributions of skin lesion of the first onset of symptoms were mostly seen in the head area (53.1%), followed by body, leg, and arm area, respectively as shown in Table 5.

Only 1,577 patients from the Institute of Dermatology were assessed for the severity of psoriasis, exacerbating factors, comorbidities, patient's problem, previous treatment, and quality of life (QoL). Of the present study population, 1,404 subjects responded to the nail-affecting question as shown in Table 6. Onycholysis is the most common nail abnormality (53.9%).

Severity of psoriasis

The affected body surface area (BSA) was categorized into two levels of affecting; mild ($\leq 10\%$ affected) and moderate-to-severe ($> 10\%$ affected). The majority of subjects had been graded as mild affected, 1,027 patients (74.85%), and moderate-to-severe (345 patients, 25.15%) (no data presented).

Table 4. Age of onset, categorized by sibling history (n = 11,260)

Sibling history	Mean	SD	p-value*
Yes	29.36	14.82	<0.001
No	33.88	16.54	

* p-value by student unpaired t-test

Table 5. Distribution of skin lesion of onset (n = 11,548)

Region	No. of patients (%)
Head	6,130 (53.1)
Body	2,752 (23.8)
Leg	2,490 (21.5)
Arm	1,938 (16.7)
Nail	961 (8.3)
Others	908 (7.8)
Hand	755 (6.5)
Foot	719 (6.2)
Face	655 (5.6)
Foldable joint	306 (2.6)

Table 6. Nail abnormality (n = 1,404)

Type of nail defect	No. of patients (%)
Onycholysis	758 (53.9)
Pitting nail	672 (47.9)
Subungual hyperkeratosis	299 (21.3)
Onychodystrophy	259 (18.4)
Oil drop	245 (17.5)

For PASI, there were only 553 subjects who had the available PASI score, which range from 1 to 50. The mean PASI score was 8.33 ± 7.89 , which represented at mild severity level. The PASI score had

been stratified into different levels of score, as shown in Table 7.

Referring to Psoriasis Practice Guideline of Dermatology Society Thailand⁽¹⁵⁾, the severity of psoriasis using PASI score can categorize the patients into two groups. The PASI score more than 10 is indicating the moderate-to-severe psoriasis and less than 10 is indicating mild severity. From Table 7, 41.9% of subjects had been categorized as moderate-to-severe psoriasis with PASI score.

Comorbidities

The most common comorbidities were allergy (12.2%), diabetes mellitus (9.6%), and HIV infection (1.6%). In addition, 35.5% of subjects had reported the joint pain as one of the other symptoms (no data presented).

Exacerbating factors

The trigger factor of flare up occurrence had been reported from 553 subjects. There were 25.8% of subjects who reported 'not known' of flare up factor. The most flare up factor was hot/cold weather (50.5%), followed by stress, and alcohol drinking (Table 8). Some subjects reported that there was more than one exacerbating factor that can bring them to flare up.

Quality of life (QoL)

The Dermatology Life Quality Index (DLQI) had been completed by 440 subjects. The mean DLQI score was 3.56±4.02 from a maximum of 30. It can be divided into five levels that effect the quality of life, as shown in Table 9. The subjects had mostly rated that psoriasis had no effect on their quality of life (43.4%). Moreover, the patients had reported that psoriasis had led them to hospitalization (5.7%) and absent from work (11.7%).

Previous treatment

The previous treatment of each subject had been recorded in the data collection. Some of them received more than one treatment. From 553 subjects who participated at the Institute of Dermatology.

Almost all subjects had been treated with topical treatment (98.2%). Only 13.1% of this group had been treated with systemic treatment and 3.6% with phototherapy (Table 10).

Almost half of this group had been treated at a government hospital/center, followed by a private clinic (35.8%), self-medicine (20%), private hospital (14%), and herbal medicine (9.9%). Interestingly, about

Table 7. PASI score (n = 553)

Score	No. of patients (%)
0-5	219 (39.60)
6-10	102 (18.44)
11-15	57 (10.31)
>15	175 (31.65)

PASI = psoriasis area and severity index

Table 8. Trigger factors (n = 553)

Factors	n (%)
Hot/cold weather	278 (50.5)
Stress	249 (45.2)
Alcohol drinking	148 (26.9)
Food	136 (24.7)
Others	87 (15.8)
Skin trauma	61 (11.1)
Infections	47 (8.5)
Medicines	17 (3.1)
Not known	143 (25.8)

Table 9. Impact to quality of life (QoL) (n = 440)

Level of impact to QoL	n (%)
No effect at all on patient's life (0-1)	191 (43.4)
Small effect on patient's life (2-5)	139 (31.6)
Moderate effect on patient's life (6-10)	67 (15.2)
Very large effect on patient's life (11-20)	43 (9.8)
Extremely large effect on patient's life (21-30)	-

Table 10. Previous treatment (n = 553)

Treatment	n (%)
Topical therapy	
Steroids	527 (95.3)
Coal tar	487 (88.1)
Vitamin D	17 (3.1)
Anthralin	3 (0.5)
Systemic therapy	
MTX	57 (10.3)
Retinoid	13 (2.4)
Steroids	2 (0.4)
Phototherapy	
PUVA	9 (1.6)
Broad UVB	4 (0.7)
Narrow band UVB	6 (1.1)

MTX = methotrexate; PUVA = psoralen-ultraviolet A; UVB = ultraviolet B

Table 11. Patient's problems (n = 546)

Problems	n (%)
Feel embarrass and be detested	276 (50.5)
Don't know the exacerbating factors	226 (41.4)
Socioeconomic	235 (43.0)
Don't think that psoriasis is chronic disease and can be cured	210 (38.5)
Tough to go to the center on a scheduled visit	196 (35.9)
Difficult to work or run habitual practice	196 (35.9)
Health care professionals didn't explain or answer the patient's question	60 (11.0)

26.6% of subjects had never been treated at any center (no data presented).

Patient's problems

To better understand the subjects' perception about the treatment and disease. The list of questions had been asked to the subjects. The recent data had shown that about a half of this group reported that they feel embarrassment and are distressed from their surrounding' (50.5%) and socioeconomic problems (43%) (Table 11).

Discussion and Conclusion

The current registry data concluded that the gender ratio is almost equally common in males and female (1.3:1) and generally similar across all regions in Thailand. This finding is allied with previous studies^(16,17). The chronic plaque type is the most commonly diagnosed (85.6%) followed by Guttate type.

It also shows that females have an earlier age of onset than males ($p < 0.001$). The majority of enrolled subjects had an early onset type of psoriasis (64.2%)⁽²⁾. As studied by Farber et al⁽¹⁶⁾, the patients who had a positive family history had an earlier age of onset than negative history. Similar to the current finding, the patients who had the positive sibling history of psoriasis had the early age of onset (29.36 years) than the negative group (33.88 years).

The most common beginning area involvements are head, trunk, leg, and arm. The proportion of patients who had been graded as moderate-to-severe is different for BSA and PASI assessment, 25.15% and 41.9%, respectively. About 56.6% of patients reported that psoriasis had impact to their quality of life and led them to hospitalization and absence from work.

The previous treatment record has not shown any surprising information; almost all patients had been treated with topical therapy. Since the recent review by Kerkhof P⁽¹⁸⁾, the phototherapy should be the next sequence of treatment after topical treatment. Additionally, the treatment can be rotated during the course of treatment. However, current data supported systemic therapy more than phototherapy.

Interestingly, there were almost 30% who did self-medicine and had been treated with herbal medicine. These findings are important issues because herbal medicine can lead to many side effects in the near future.

Most of the patients rated that to have psoriasis made them feel embarrassed and detested in public (50%).

Gathering all findings as mentioned earlier, the disease awareness, burden of disease, and disease education in public are really needed to let the public know about the disease. It is important to let the public know that the disease is not transmitted but chronic and recurrent. With these activities, the affected patients may feel more comfortable in public and improve their quality of life, even just a little bit.

Funding source

The research grant was supported by government budget.

Acknowledgement

The authors wish to thank the psoriasis registry working groups from 32 dermatological centers in Thailand. Northern region: Chiang Mai University, Sawanpracharak Hospital, Uttradit Hospital, Phrabuddhachinnaraj Hospital, Sukhothai Hospital, Mae-Sod Hospital, and Petchaboon Hospital. Central region: Ratchaburi Hospital, Baan-Pong Hospital, Phrabuddhabart Hospital, and Chaophraya Yommarat Hospital. Eastern region: Chaophraya Apaipubej Hospital, Phrapokklao Hospital, Chachoensao Hospital, and Chonburi Hospital. Northeastern region: Udonthani Hospital, Maharaj Korat Hospital, and Sirinthorn Hospital. Southern region: Songkhla Nakarindr Hospital, Songkhla Hospital, Hat-Yai Hospital, Vachira Phuket Hospital, Dermatological Center in Trung, Yala Hospital, Pattanee Hospital, and Maharaj Nakornsrihammaraj Hospital. Bangkok province: Queen Sirikit National Institute, Rajvithee Hospital, Taksin Hospital, Phramonkutklao Hospital, Makut Temple Dermatological Center, and Institute of Dermatology.

Potential conflicts of interest

None.

References

1. Christophers E. Psoriasis-epidemiology and clinical spectrum. *Clin Exp Dermatol* 2001; 26: 314-20.
2. Gelfand JM, Weinstein R, Porter SB, Neimann AL, Berlin JA, Margolis DJ. Prevalence and treatment of psoriasis in the United Kingdom: a population-based study. *Arch Dermatol* 2005; 141: 1537-41.
3. Stern RS, Nijsten T, Feldman SR, Margolis DJ, Rolstad T. Psoriasis is common, carries a substantial burden even when not extensive, and is associated with widespread treatment dissatisfaction. *J Invest Dermatol Symp Proc* 2004; 9: 136-9.
4. Raychaudhuri SP, Farber EM. The prevalence of psoriasis in the world. *J Eur Acad Dermatol Venereol* 2001; 15: 16-7.
5. Huerta C, Rivero E, Rodriguez LA. Incidence and risk factors for psoriasis in the general population. *Arch Dermatol* 2007; 143: 1559-65.
6. Icen M, Crowson CS, McEvoy MT, Dann FJ, Gabriel SE, Maradit KH. Trends in incidence of adult-onset psoriasis over three decades: a population-based study. *J Am Acad Dermatol* 2009; 60: 394-401.
7. Kimball AB, Kupper TS. Future perspectives/quo vadis psoriasis treatment? Immunology, pharmacogenomics, and epidemiology. *Clin Dermatol* 2008; 26: 554-61.
8. Chandran V, Raychaudhuri SP. Geoepidemiology and environmental factors of psoriasis and psoriatic arthritis. *J Autoimmun* 2010; 34: J314-21.
9. Gudjonsson JE, Elder JT. Psoriasis: epidemiology. *Clin Dermatol* 2007; 25: 535-46.
10. Tollefson MM, Crowson CS, McEvoy MT, Maradit KH. Incidence of psoriasis in children: a population-based study. *J Am Acad Dermatol* 2010; 62: 979-87.
11. Langley RG, Krueger GG, Griffiths CE. Psoriasis: epidemiology, clinical features, and quality of life. *Ann Rheum Dis* 2005; 64 (Suppl 2): ii18-23.
12. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI)—a simple practical measure for routine clinical use. *Clin Exp Dermatol* 1994; 19: 210-6.
13. Kulthanan K, Jiamton S, Wanitpahakdeedecha R, Chantharujikaphong S. The validity and reliability of the Dermatology Life Quality Index (DLQI) in Thais. *Thai J Dermatol* 2004; 20: 113-23.
14. Lebwohl M, Papp K, Han C, Schenkel B, Yeilding N, Wang Y, et al. Ustekinumab improves health-related quality of life in patients with moderate-to-severe psoriasis: results from the PHOENIX 1 trial. *Br J Dermatol* 2010; 162: 137-46.
15. Noppakun N, Ratchatanavin N, Suthipinittham P, Puvabanditsin P, Akaraphanth R, Tuchinda C, et al. Clinical practice guideline for psoriasis. In: Guideline PDF [Internet]. Chiang Mai: Department of Family Medicine, Chiang Mai University; 2010 [cited 2010 Aug 4]: 94-126. Available from: <http://www.med.cmu.ac.th/dept/family/2012/index.php/en/pdf-guideline>
16. Farber EM, Nall L. Epidemiology: natural history and genetics. In: Roenigk HH Jr, Maibach HI, editors. *Psoriasis*. 3rd ed. New York: Dekker; 1998: 107-57.
17. Fry L. Psoriasis. *Br J Dermatol*. 1988; 119: 445-61.
18. van de Kerkhof PC. Options for the treatment of psoriasis: a multifactorial approach. *Clin Dermatol* 2008; 26: 419-23.

โครงการลงทะเบียนผู้ป่วยสะกดเงินในประเทศไทย

รัชนี อัครพันธุ์, อรยา กว่างสุขสถิตย์, พิมลพรรณ กฤติยรังสรรค์, นฤมล สวรรค์ปัญญาเลิศ

ภูมิหลัง: สถาบันโรคผิวหนังแห่งประเทศไทยโดยความร่วมมือกับโรงพยาบาลจำนวนมากในประเทศไทยได้ดำเนินโครงการลงทะเบียนผู้ป่วยสะกดเงินในประเทศไทยในช่วงปี พ.ศ. 2548 ถึง ปี พ.ศ. 2551

วัตถุประสงค์: เพื่อที่จะทำการศึกษาดังข้อมูลทางระบาดวิทยาของโรคสะกดเงิน การกระจายของโรคและชนิดของโรคสะกดเงินที่พบในประเทศไทย อีกทั้งยังมีจุดมุ่งหมายเพื่อที่จะจัดทำฐานข้อมูลโรคสะกดเงินในประเทศไทย

วัสดุและวิธีการ: โครงการลงทะเบียนนี้จะทำการเก็บข้อมูลทั่วไปของผู้ป่วย ความรุนแรงของโรคและคุณภาพชีวิตของผู้ป่วยสะกดเงิน โดยที่ผู้ป่วยจะได้รับการประเมินความรุนแรงของโรคและทำแบบสอบถามเกี่ยวกับคุณภาพชีวิต ณ เวลาที่ได้รับการเชิญให้เข้าร่วมโครงการลงทะเบียนเพียงหนึ่งครั้งเท่านั้น

ผลการศึกษา: มีผู้ป่วยสะกดเงินเข้าร่วมโครงการลงทะเบียนทั้งสิ้น 11,548 ราย จาก 32 สถาบันทั่วประเทศ โดยที่มีอัตราส่วนเพศชายต่อเพศหญิงที่เข้าร่วมโครงการทะเบียนเป็น 1.3:1 พบว่าสะกดเงินชนิด plaque เป็นชนิดที่พบมากที่สุด (ร้อยละ 85.6) อายุที่เริ่มมีผื่นเฉลี่ยอยู่ที่ 32.88 ปี และพบว่าเพศหญิงจะเริ่มมีผื่นเร็วกว่าเพศชาย ผู้ป่วยในโครงการส่วนมากเป็นโรคสะกดเงินแบบอายุยังน้อย (ร้อยละ 64.2) โดยบริเวณที่พบว่าเป็นผื่นครั้งแรกของผู้ป่วยมากที่สุดคือ ศีรษะ ลำตัว และขา และเมื่อพิจารณาความรุนแรงของโรคพบว่าผู้ป่วยถึง ร้อยละ 25 ที่ได้รับการประเมินว่ามีความรุนแรงของโรคอยู่ที่ระดับปานกลางถึงรุนแรงมาก โดยประเมินจากพื้นที่ผิวที่มีรอยโรคและมีผู้ป่วยถึง ร้อยละ 56.6 ที่รายงานว่ารื้อสะกดเงินส่งผลกระทบต่อคุณภาพชีวิตของผู้ป่วย นอกจากนี้ยังพบว่าปัจจัยกระตุ้นสำคัญทำให้เกิดผื่นของผู้ป่วยคือ สภาพอากาศ ความเครียด และการดื่มแอลกอฮอล์ เป็นที่น่าสนใจว่ามีผู้ป่วยประมาณร้อยละ 50 ที่รายงานว่ารู้สึกอับอายและถูกรังเกียจจากสังคม

สรุป: จากผลการศึกษาของโครงการลงทะเบียนครั้งนี้ทำให้มีความรู้ความเข้าใจเกี่ยวกับระบาดวิทยาของโรคสะกดเงินในประเทศไทย ได้ดีขึ้นอีกทั้งยังเป็นการเก็บข้อมูลลงทะเบียนผู้ป่วยสะกดเงินอย่างเป็นทางการครั้งแรกในประเทศไทย
