Validity and Reliability of the Topical Corticosteroid Phobia (TOPICOP©) Questionnaire: Thai Version

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ABSTRACT

Objective: To determine the validity and reliability of the Thai version of the Topical Corticosteroid Phobia (TOPICOP©) questionnaire, which is used to evaluate topical corticosteroid (TCS) phobia in atopic dermatitis (AD).

Materials and Methods: The translation process and assessment of content validity were undertaken step-by-step. Adult patients with AD and the guardians of pediatric patients with AD completed the questionnaire twice, 2 weeks apart to test the reliability.

Results: We enrolled 30 adult patients with AD and 30 caretakers of pediatric patients with AD in this study. The Index of Item-Objective Congruence (IOC) was 0.9, indicating high validity. Test-retest reliability using Pearson correlation coefficient was tested, with r 0.938 ($p < 0.001$). The Cronbach's alpha coefficient showed reliable internal consistency, with 0.691 and 0.734, respectively.

Conclusion: The Thai version of the TOPICOP© is valid, reliable, and feasible for assessing TCS phobia in patients with AD and their caretakers of pediatric patients with AD.

Keywords: Atopic dermatitis; questionnaire; reliability; topical corticosteroid phobia; TOPICOP (Siriraj Med J 2023; 75: 115-120)

INTRODUCTION

Topical corticosteroids (TCS) have been a cornerstone of treatment for various skin conditions. However, steroid phobia is an important issue in clinical practice in the field of cooperation and therapeutic outcomes for skin diseases that require steroid treatment. The local and serious systemic side effects are widely discussed and are concerns among patients and caregivers, often resulting in limited use of TCS in medical practice.[1-3]

The term of steroid phobia was firstly termed within the context of asthma and eczema in 1987.[4] This phenomenon is common, complex, and widespread. Steroid phobia has broad implications and ranges from worry, fear, and excessive anxiety to an irrational fear of using TCS.[5-7] Steroid phobia can arise for a variety of reasons including a negative personal experience with side effects, misunderstandings, polypharmacy, frequent changes in clinics, and misinformed advice.[5,6,8,9]

In a systematic review of the literature from 1946 to 2016, the prevalence of TCS phobia ranged from 21% to 83.7%.[7] TCS phobia may be associated with a higher rate of noncompliance.[3,7] Recently, a systematic review including studies published between May 2000 and February 2021, found that the prevalence of steroid phobia found that was higher, ranged from 31% to 95.7%.[8]

Prior to 2013, no standardized tools were available to evaluate steroid phobia. Additionally, each relevant study used a different definition of steroid phobia.[6,7]

TOPICOP© is a questionnaire for the assessment of TCS phobia in atopic dermatitis (AD), which was conducted in 2010. They can be assessed by answering the questionnaire themselves. The questionnaire comprises

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12 questions, divided into two assessments: Six items address knowledge and beliefs, and six items address fears and behaviors. The responses for each item are scored from 0 to 3 on a 4-point-Likert scale), with a total score of 36, which can be converted to a percentage for easier calculation. A high score is associated with greater severity of steroid phobia. The TOPICOP© has been tested for its psychometric properties and had a Cronbach's a-coefficients of 0.81. The French version of the TOPICOP© scale was released in 2013, with subsequent translations into English and other languages.[6] The TOPICOP© was used in a multi-institutional feasibility study in 15 countries among 1,564 volunteers. The results showed that 81% of respondents rated the questionnaire as being very clear and to the point, and 79% could complete the questionnaire in less than 5 minutes.[10]

We aimed to translate the English version of the TOPICOP© scale into Thai language and to test the validity and reliability of the Thai version of the TOPICOP© to obtain a standard for application in further studies.

MATERIALS AND METHODS

In this cross-sectional study, we collected data on TCS phobia among adult patients with AD and parents of pediatric patients with AD who visited the outpatient department at the Institute of Dermatology, Bangkok, Thailand between April, and October 2021 were recruited.

The authors requested permission from Dr. Sebastien Barbarot, the copyright owner of the TOPICOP© questionnaire, to translate the scale into Thai according to the suggestion and use it in this study. This research was approved by the Institutional Review Board of the Institute of Dermatology and the Department of Medical Services, Ministry of Public Health, Thailand (certification of approval number IRB/IEB 006/2021).

We coordinated with standardized document translation centers to translate the English version of the TOPICOP© questionnaire into Thai. The preliminary Thai-translated questionnaire was corrected and adjusted to confirm that the Thai version of TOPICOP© covered all aspects of the concept being measured. We used a process of forward and backward translations. To assess the content validity of the Thai version of TOPICOP, three bilingual dermatologists assessed the content validity. The Index of Item-Objective Congruence (IOC) was used to evaluate the questionnaire items based on a score range from -1 to +1. On the basis, we developed the Thai version of the TOPICOP© (Fig 1).

แบบสอบถามเรื่องความกลัวในการใช้ยาทาสเตียรอยด์

แพทย์ได้สั่งยาทาสเตียรอยด์ให้คุณหรือเด็กในปกครองของคุณเพื่อทาบริเวณผื่น
แบบสอบถามนี้ต้องการที่จะทราบเกี่ยวกับความรู้ ความเชื่อ ความกังวล และพฤติกรรมเกี่ยวกับการรักษาด้วยวิธีนี้
โปรดเลือกคำตอบที่ตรงกับความคิดเห็นของคุณมากที่สุด

1. ยาทาสเตียรอยด์สามารถดูดซึมเข้าสู่กระแสเลือด
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
2. ยาทาสเตียรอยด์ทำให้เกิดการติดเชื้อ
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
3. ยาทาสเตียรอยด์ทำให้คุณอ้วน
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
4. ยาทาสเตียรอยด์ทำลายผิวหนังของคุณ
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
5. ยาทาสเตียรอยด์ส่งผลเสียต่อสุขภาพในอนาคต
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
6. ยาทาสเตียรอยด์ทำให้เป็นโรคหืด
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
7. ฉันกลัวการทายาสเตียรอยด์บนผิวหนังบางตำแหน่ง เช่น รอบดวงตา
❑ ไม่เลยสักนิด ❑ ไม่จริง ❑ เล็กน้อย ❑ แน่นอน
8. ฉันไม่แน่ใจเรื่องผลข้างเคียงของยาทาสเตียรอยด์แต่ฉันยังรู้สึกกลัวที่จะใช้ยา
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
9. ฉันกลัวว่าจะใช้ยาทาสเตียรอยด์มากเกินไป
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง
10. ฉันรอนานที่สุดเท่าที่จะทำได้ก่อนที่จะรักษาตัวเองหรือเด็กในปกครองด้วยยาทาสเตียรอยด์
❑ ไม่เคย ❑ บางครั้ง ❑ บ่อยครั้ง ❑ ตลอดเวลา
11. ฉันหยุดยาทาสเตียรอยด์โดยเร็วที่สุดเท่าที่จะทำได้
❑ ไม่เคย ❑ บางครั้ง ❑ บ่อยครั้ง ❑ ตลอดเวลา
12. ฉันต้องการคำแนะนำให้มั่นใจเพิ่มขึ้นเกี่ยวกับยาทาสเตียรอยด์
❑ ไม่เห็นด้วยอย่างยิ่ง ❑ ไม่เห็นด้วย ❑ เห็นด้วย ❑ เห็นด้วยอย่างยิ่ง

Fig 1. Thai version of the Topical Corticosteroid Phobia (TOPICOP©) questionnaire.

Adult patients with AD and the parents of pediatric patients with AD aged younger than 18 years old who attended our outpatient unit were asked to join the study. Sixty participants were selected according to the inclusion and exclusion criteria. Those who were unable to read Thai were excluded. To assess the reliability, the test-retest method was performed, and the volunteers were asked to complete the TOPICOP© twice, two weeks apart.

Statistical analyses

Demographic data are presented as descriptive statistics with means ± standard deviations (SD), and the median for continuous variables and frequency, and percentages for categorical variables. The test-retest method using Pearson correlation was used to test the reliability of the translated version over time, which participants asked to complete the TOPICOP© twice, 2 weeks apart. A Pearson correlation coefficient more than 0.8 was considered to indicate reliability. Cronbach's alpha method was used to measure the internal consistency within each subscale to check whether all questions were measured in the same way. IBM SPSS Statistics for Mac, version 28.0.1.1 was used for data management and statistical analyses (IBM Corp., Armonk, NY, USA).

RESULTS

A total of 60 participants (30 adult patients with AD and 30 parents of pediatric patients with AD) completed the questionnaire, with 68.3% females, and mean age 33.7±10.7 years. Most respondents had a bachelor's degree or higher (83.3%), and 43.3% of patients had moderate severity of AD. The median duration of AD was 3.6 years. Among the total respondents, 10% reported that they themselves or their children had previous complications from TCS. Compared with pediatric patients, adult patients with AD had more comorbidities, especially AD concomitant with allergic rhinitis. Doctors were the most common source of information about TCS, followed by the internet, pharmacists, nurses, friends/family, and television or radio. Seventy percent of respondents admitted buying topical steroids without a prescription. Demographic data, knowledge, behaviors, and disease characteristics are shown in Table 1.

The mean TOPICOP scores among participants was respectively 21.1±4.2 (58.6±11.7%) and 21.4±4.4 (59.4±1.22%) on the two testing occasions. There was no difference in scores between adult patients with AD and parents of pediatric patients with AD (Table 2).

In terms of content validity, an acceptable threshold of the IOC is considered to be more than 0.5 for all items. In the Thai version of TOPICOP©, the IOC for all items was 0.9; r=0.938 (p <0.001), and Cronbach's alpha coefficients for the test-retest was 0.691, and 0.734, respectively (Table 3).

Responses to each item of the TOPICOP© scale were shown in Table 4. We identified some areas of concern. Most participants reported that they were afraid of applying too much TCS, that they felt afraid of applying TCS to the areas where the skin is very delicate, and that they needed reassurance about TCS.

The median (range) time to complete 12 questions in all participants was 2 (0.66-9) minutes. Ninety-three percent of participants completed the questionnaire in less than 5 minutes.

DISCUSSION

Steroid phobia has never been explored in Thailand. The prevalence of and reasons for TCS phobia should be addressed to improve adherence, intervention, and improved quality of life of the patients and caregivers. The TOPICOP© can help clinicians and researchers to identify the fears relating to TCS.

In a cross-cultural study using a questionnaire, the validity and reliability of translation must be assessed to ensure that the translated questionnaire properly addresses cultural and linguistic differences. In the present study, the validity of the TOPICOP©, Thai version was statistically approved. Evidence of reliability using the Pearson correlation coefficient of the test-retest data was strongly high and the Cronbach's alpha coefficient was acceptable. The results of the assessment were similar to those of previous reports.[6,10] The time spent on the questionnaire completion was only 2 minutes. Thus, this self-assessment tool can be useful in clinical practice owing to its short completion time.

Scores on the TOPICOP© were moderately high in our population (mean, 58.6%); however, it is not possible to determine the magnitude and severity of TCS phobia among Thais. Further studies on the prevalence of TCS phobia, correlation with disease severity, and compliance should be discussed in larger population.

Healthcare workers have important roles in providing information that can affect concerns about TCS. However, online sources of information regarding TCS are increasingly common. A high rate of buying TCS over the counter without a prescription was reported among participants. Awareness and knowledge about TCS treatment are crucial topics to be considered.

Limitations

The main limitation in our study was the small sample

TABLE 1. Demographic data, knowledge, behaviors, and disease characteristics.

Demographic data	All (n=60)	Adult patients (n=30)	Parents of pediatric patients (n=30)
Age (years): mean (SD)	33.7 (10.7)	28.2 (8.3)	39.2 (10.2)
Sex: n (%)			
Male	19 (31.7%)	17 (56.7%)	2 (6.7%)
Female	41 (68.3%)	13 (43.3%)	28 (93.3%)
Education: n (%)			
Primary	-	-	-
Secondary	10 (16.7%)	2 (6.7%)	8 (26.7%)
Graduate	38 (63.3%)	24 (80.0%)	14 (46.7%)
Post-graduate	12 (20.0%)	4 (13.3%)	8 (26.7%)
Occupation: n (%)			
Non-medical professionals	54 (90.0%)	27 (90.0%)	27 (90.0%)
Medical professionals	6 (10.0%)	3 (10.0%)	3 (10.0%)
Income (Baht/month): n (%)			
< 15,000	8 (13.3%)	4 (13.3%)	4 (13.3%)
15,001 – 30,000	20 (33.3%)	11 (36.7%)	9 (30.0%)
30,001 – 50,000	10 (16.7%)	5 (16.7%)	5 (16.7%)
>50,000	22 (36.7%)	10 (33.3%)	12 (40.0%)
Know the advantages of TCS	41 (68.3%)	20 (66.7%)	21 (70.0%)
Know the disadvantages of TCS	34 (56.7%)	16 (53.3%)	18 (60.0%)
Source of information about TCS			
Doctors	51 (85.0%)	24 (80.0%)	27 (90.0%)
Nurses	12 (20.0%)	5 (16.7%)	7 (23.3%)
Pharmacists	25 (41.7%)	11 (36.7%)	14 (46.7%)
Friends/family	11 (18.3%)	6 (20.0%)	5 (16.7%)
Television/radio	8 (13.3%)	3 (10.0%)	5 (16.7%)
Internet	25 (41.7%)	13 (43.3%)	12 (40.0%)
History of buying topical corticosteroids without a prescription	42 (70.0%)	21 (70.0%)	21 (70.0%)
Duration of disease (years): median (range)	3.6 (0.1-33.7)	14.5 (0.1-33.7)	2.0 (0.2-15.0)
Baseline SCORAD score	34.7 (20.0)	38.6 (22.7)	30.8 (16.3)
AD severity: n (%)			
Mild	23 (38.3)	10 (33.3)	13 (43.3)
Moderate	26 (43.3)	14 (46.7)	12 (40.0)
Severe	11 (18.3)	6 (20.0)	5 (16.7)
Comorbidities: n (%)			
None	26 (43.3)	9 (30.0)	17 (56.7)
Food allergy	8 (13.3)	5 (16.7)	3 (10.0)
Asthma	2 (3.3)	2 (6.7)	0 (0.0)
Allergic rhinitis	27 (45.0)	18 (60.0)	9 (30.0)
Other	3 (5.0)	2 (6.7)	1 (3.3)
Number of relapses in 1 month: median (range)	2 (0-5)	2 (0-5)	2 (0-4)
Duration of exacerbation cycle (days/cycle): median (range)	5.5 (0-30)	6.5 (1-30)	4.5 (0-30)
Hospital admission: Yes	32 (53.3)	22 (73.3)	10 (33.3)
Complications: Yes	6 (10.0)	3 (10.0)	3 (10.0)

Abbreviations: SCORAD, scoring atopic dermatitis; SD, standard deviation; AD, atopic dermatitis; TCS, topical corticosteroids.

TABLE 2. Scores for the Topical Corticosteroid Phobia (TOPICOP©), Thai version.

Global TOPICOP score	All (n = 60)	Patients (n=30)	Parents (n=30)
Sum score: mean (SD)			
First time	21.1 (4.2)	21.2 (4.1)	21.0 (4.4)
Second time	21.4 (4.4)	21.8 (4.7)	21.1 (4.2)

TABLE 3. Validity and Reliability.

Content validity	IOC
Q1: TCS can be absorbed into the bloodstream.	1.0
Q2: TCS can lead to infections.	1.0
Q3: TCS can make you fat.	1.0
Q4: TCS damage your skin.	0.7
Q5: TCS will affect your future negatively.	1.0
Q6: Using TCS can lead to asthma.	1.0
Q7: I am afraid of putting TCS on certain skin areas such as eyelids.	1.0
Q8: I do not know of any side effects, but I am still afraid of using TCS.	1.0
Q9: I am afraid of applying too much TCS.	0.7
Q10: I wait as long as I can before treating myself or my child with TCS.	0.7
Q11: I stop TCS treatment as soon as I can.	1.0
Q12: I need reassurance about topical corticosteroids.	0.7
Mean	0.9
Reliability	
Test-retest reliability: Pearson correlation coefficient	r = 0.938
Internal consistency: Cronbach's alpha coefficient	
First test	α = 0.691
Second test	α = 0.734

Abbreviations: IOC, The Index of Item-Objective Congruence; TCS, topical corticosteroid.

size, as a result, we could not estimate the relationship between TCS phobia and related patient or caretaker factors. Additionally, in this study, we did not review more detailed data of TOPICOP subscores addressing aspects of worry and beliefs. Use of the TOPICOP© is appropriate for the identification of patients' or parents' fears regarding TCS but cannot be used to assess patient adherence.

CONCLUSION

The Thai version of the TOPICOP© is valid, reliable, and feasible for self-assessment of topical corticosteroid phobia in Thai AD patients or their caretakers. Further studies among a large number of patients will be informative and beneficial for identifying topical corticosteroid phobia among Thais. These data will help to improve compliance with AD therapy and therapeutic outcomes.

TABLE 4. Responses for Topical Corticosteroid Phobia (TOPICOP©) scale items.

Items of the TOPICOP© n (%)	Totally disagree/ never	Not really agree/ sometimes	Almost agree/often	Totally agree/always
Q1: TCS can be absorbed into bloodstream.	2 (3.3)	24 (40)	25 (41.7)	9 (15)
Q2: TCS can lead to infection.	5 (8.3)	29 (48.3)	21 (35)	5 (8.3)
Q3: TCS can make you fat.	9 (15)	40 (66.7)	7 (11.7)	4 (6.7)
Q4: TCS damage your skin.	2 (3.3)	9 (15)	41 (68.3)	8 (13.3)
Q5: TCS will affect your future health negatively.	2 (3.3)	8 (13.3)	37 (61.7)	13 (21.7)
Q6: Using TCS can lead to asthma.	14 (23.3)	41 (68.3)	4 (6.7)	1 (1.7)
Q7: I am afraid of putting TCS on certain skin areas such as eyelids.	1 (1.7)	4 (6.7)	24 (40)	31 (51.7)
Q8: I do not know of any side effects, but I am still afraid of using TCS.	5 (8.3)	13 (21.7)	38 (63.3)	4 (6.7)
Q9: I am afraid of applying too much TCS.	0 (0)	3 (5)	30 (50)	27 (45)
Q10: I wait as long as I can before treating myself or my child with TCS.	13 (21.7)	28 (46.7)	13 (21.7)	6 (10)
Q11: I stop TCS treatment as soon as I can.	5 (8.3)	20 (33.3)	16 (26.7)	19 (31.7)
Q12: I need reassurance about TCS.	0 (0)	5 (8.3)	16 (26.7)	39 (65)

Abbreviation: TCS, topical corticosteroid.

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