

Reliability of a Thai Version of King's Health Questionnaire in Thai Females with Overactive Bladder Symptoms

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Objectives: To develop and test the reliability of a Thai version of the King's Health Questionnaire (KHQ).

Material and Method: Three Thai Urologists forward translated the original English KHQ into a Thai version. Back translations were performed by an independent group of physicians. A consensus was reached on a final Thai version after comparing the original KHQ and various translations. Fifty Thai female patients with symptoms of overactive bladder were tested and retested every two weeks using the Thai version (twice) as well as the English version (once) of the KHQ. Test-retest reliability of the Thai questionnaire was measured using the kappa statistic.

Results and Conclusion: The Thai version of the KHQ was found to be reasonably reliable for use in Thai female patients with over active bladder symptoms.

Keywords: King's Health Questionnaire, Thai, Reliability, Overactive bladder

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Overactive bladder (OAB), characterized by the symptoms of urinary urgency, frequency and nocturia, is often associated with urge incontinence and appears without a local pathologic or metabolic explanation⁽¹⁾. It is a debilitating and chronic condition that has an important impact on patients' lives. Overactive bladder can cause discomfort, embarrassment, loss of confidence that can lead to withdrawal from social life, affects physical and mental health, and disrupts interpersonal relationships⁽²⁾. As an overactive bladder is defined by symptoms, the evaluation of severity and result of treatment should be based on patient perception. Patient's report of the symptoms in terms of quality of life measures is useful and important⁽³⁾. The King's Health Questionnaire (KHQ) is a disease-

specific health-related quality-of-life (HRQoL) instrument used in patients with urinary incontinence⁽⁴⁾. Since its development, the KHQ has been widely used in clinical studies as a valid, reliable and clinically sensitive endpoint or outcome measure. It has been translated and validated in more than 36 languages including French, German, Spanish, Swiss, Italian and Japanese^(5,6). The objective of the present study was to develop the Thai KHQ, which is culturally and linguistically validated, and to test its reliability.

Material and Method

Development of the Thai version of the KHQ

Three Urologists who have extensive experience in the management of urinary incontinence independently performed the forward translation of the English KHQ into Thai. All three Urologists also kept a log of which items caused problems in translation. After complete translation, a consensus meeting among

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translators was held and cultural, linguistic and emotional issues were discussed. These translations were combined into an initial Thai version of the KHQ. A psychiatrist also reviewed the initial Thai version of the KHQ.

Another group of Thai-English translators with prior medical training independently performed the back translations into English. At the final consensus meeting the original English version of the KHQ, the back translated versions and the Thai version were compared item-by-item. At the end, a final Thai version of the KHQ was obtained (see appendix).

Test and retest

The reliability study of the Thai version of the KHQ was performed on 50 female patients who had overactive bladder symptoms and who were treated at

the Division of Urology, Department of Surgery, Ramathibodi Hospital. All patients could read and understand both English and Thai. Overall there were three test sessions for each patient. At the first test session, the Thai KHQ was administered (the first Thai session). Two weeks later, a second test session was done on the same group of patients using the same Thai KHQ (the second Thai session). Two weeks after the second test session (or four weeks after the first), a third session was scheduled and the test was done using the English version of the KHQ (the English session). All patients completed all the questionnaires.

Statistical analysis

The response to each item in the questionnaire was summarized as counts and percentages. This was done for all three sessions (Tables 1-3). The

Table 1. Summary of responses for the first Thai session (N = 50)

Domains	Rating category for each item ^a [number (%)]					
	0	1	2	3	4	5
1. General health perceptions	NA	0	5 (10)	23 (46)	19 (38)	3 (6)
2. Impact on life	NA	0	7 (14)	33 (66)	10 (20)	NA
3. Role limitations						
House hold	NA	0	12 (24)	29 (58)	9 (18)	NA
ADL	NA	0	8 (16)	28 (56)	14 (28)	NA
4. Physical limitations						
Physical activities	NA	1 (2)	20 (40)	29 (58)	0	NA
Travel	NA	0	17 (34)	30 (60)	3 (6)	NA
5. Social limitations						
Social life	NA	1 (2)	27 (54)	22 (44)	0	NA
Visit friends	NA	0	18 (36)	32 (64)	0	NA
Family life	0	1 (2)	22 (44)	27 (54)	0	NA
6. Personal relationship						
Partner	0	7 (14)	27 (54)	16 (32)	0	NA
Sex life	0	5 (10)	25 (50)	20 (40)	0	NA
7. Emotions						
Depressed	NA	15 (30)	32 (64)	3 (6)	0	NA
Anxious	NA	12 (24)	33 (66)	5 (10)	0	NA
Feel bad	NA	14 (28)	32 (64)	4 (8)	0	NA
8. Sleep/energy						
Sleep	NA	19 (38)	28 (56)	3 (6)	0	NA
Tired	NA	12 (24)	32 (64)	6 (12)	0	NA
9. Incontinence severity						
Wear pad	NA	0	28 (56)	22 (44)	0	NA
Control fluids	NA	0	16 (32)	31 (62)	3 (6)	NA
Change underclothes	NA	0	23 (46)	25 (50)	2 (4)	NA
Smell bad	NA	0	12 (24)	36 (72)	2 (4)	NA
Embarrassed	NA	0	19 (38)	28 (56)	3 (6)	NA

^a These ratings are according to the King's Health Questionnaire (see text); NA refers to "Not Applicable"

Table 2. Summary of responses for the second Thai session (N = 50)

Domains	Rating category for each item ^a [number (%)]					
	0	1	2	3	4	5
1. General health perceptions	NA	0	4 (8)	24 (48)	20 (40)	2 (4)
2. Impact on life	NA	0	7 (14)	34 (68)	9 (18)	NA
3. Role limitations						
House hold	NA	0	9 (18)	31 (62)	10 (20)	NA
ADL	NA	0	7 (14)	32 (64)	11 (22)	NA
4. Physical limitations						
Physical activities	NA	1 (2)	20 (40)	29 (58)	0	NA
Travel	NA	0	16 (32)	31 (62)	3 (6)	NA
5. Social limitations						
Social life	NA	1 (2)	24 (48)	25 (50)	0	NA
Visit friends	NA	0	19 (38)	31 (62)	0	NA
Family life	0	1 (2)	20 (40)	29 (58)	0	NA
6. Personal relationship						
Partner	0	7 (14)	26 (52)	17 (34)	0	NA
Sex life	0	6 (12)	25 (50)	19 (38)	0	NA
7. Emotions						
Depressed	NA	14 (28)	32 (64)	4 (8)	0	NA
Anxious	NA	12 (24)	34 (68)	4 (8)	0	NA
Feel bad	NA	14 (28)	33 (66)	3 (6)	0	NA
8. Sleep/energy						
Sleep	NA	19 (38)	27 (54)	4 (8)	0	NA
Tired	NA	12 (24)	34 (68)	4 (8)	0	NA
9. Incontinence severity						
Wear pad	NA	0	28 (56)	22 (44)	0	NA
Control fluids	NA	0	16 (32)	30 (60)	4 (8)	NA
Change underclothes	NA	0	25 (50)	23 (46)	2 (4)	NA
Smell bad	NA	0	14 (28)	33 (66)	3 (6)	NA
Embarrassed	NA	0	17 (34)	29 (58)	4 (8)	NA

^a These ratings are according to the King's Health Questionnaire (see text); NA refers to "Not Applicable"

pairwise agreement between sessions for each item in the questionnaire (i.e. the reliability) was measured using the weighted kappa statistic. All the statistical analyses were performed with STATA v.7 software (Stata Corp, TX 77840 USA).

Results

There were 50 female patients in this study, with an average age of 48 years (range: 29 to 61 years). The result of administering the questionnaires to 50 subjects in the first session is summarized in table 1. According to this table, for almost all items, most of the responses (70% to over 90%) fall in the second and third categories (corresponding to mild-to-moderate adverse effects of urinary symptoms on the quality of life; see also the appendix)^(4,7). The exception seems to be the response to the "general health perceptions" domain (domain 1), in which most subjects (90% or

more) rated their health as being "fair" to "very poor". The proportion of patients in each response category remained remarkably stable across sessions. The results of the second and third sessions are therefore not shown here. The agreement between sessions was quite high (Table 4), since most of the pairwise kappa measures of agreement were above 0.8. There seemed to be no definite pattern in the degree of agreement between the sessions, although the agreement was highest between the first Thai language session and the English session more frequently than other comparisons.

Discussion

Overall, the Thai version of the KHQ seemed to be reasonably reliable for use in our patients. Although our patients were relatively young (average age: 48 years), most perceived their health to be "fair"

Table 3. Summary of responses for the English session (N = 50)

Domains	Rating category for each item ^a [number (%)]					
	0	1	2	3	4	5
1. General health perceptions	NA	0	4 (8)	23 (46)	21 (42)	2 (4)
2. Impact on life	NA	0	7 (14)	32 (64)	11 (22)	NA
3. Role limitations						
House hold	NA	0	11 (22)	28 (56)	11 (22)	NA
ADL	NA	0	9 (18)	28 (56)	13 (26)	NA
4. Physical limitations						
Physical activities	NA	1 (2)	20 (40)	29 (58)	0	NA
Travel	NA	1 (2)	15 (30)	31 (62)	3 (6)	NA
5. Social limitations						
Social life	NA	1 (2)	26 (52)	23 (46)	0	NA
Visit friends	NA	0	20 (40)	30 (60)	0	NA
Family life	0	1 (2)	21 (42)	28 (56)	0	NA
6. Personal relationship						
Partner	0	6 (12)	27 (54)	17 (34)	0	NA
Sex life	0	6 (12)	23 (46)	21 (42)	0	NA
7. Emotions						
Depressed	NA	13 (26)	34 (68)	3 (6)	0	NA
Anxious	NA	13 (26)	32 (64)	5 (10)	0	NA
Feel bad	NA	13 (26)	34 (68)	3 (6)	0	NA
8. Sleep/energy						
Sleep	NA	18 (36)	29 (58)	3 (6)	0	NA
Tired	NA	13 (26)	31 (62)	6 (12)	0	NA
9. Incontinence severity						
Wear pad	NA	0	27 (54)	22 (44)	1 (2)	NA
Control fluids	NA	0	14 (28)	32 (64)	4 (8)	NA
Change underclothes	NA	0	25 (50)	23 (46)	2 (4)	NA
Smell bad	NA	0	12 (24)	36 (72)	2 (4)	NA
Embarrassed	NA	0	18 (36)	28 (56)	4 (8)	NA

^a These ratings are according to the King's Health Questionnaire (see text); NA refers to "Not Applicable"

or "poor" (domain 1, categories 3 and 4; see Table 1). Most of the patients also felt that their urinary symptoms affected their lives at least "moderately" (domain 2, category 3 or above). There seemed to be considerable limitations in terms of physical, social and routine activities or duties (domains 3 to 5, categories 2 and 3), as well as some problems with personal relationships (domain 6, categories 2 and 3). However, few patients were emotionally affected to a great degree and most could still sleep well (domains 7 and 8, categories 1 and 2). Incontinence severity ratings and scores seemed to show that most patients had mild to moderate degree of difficulty in coping with their incontinence (domain 9, categories 2 and 3).

There was excellent agreement in the responses to the items in the questionnaire between all sessions (table 2). There was no apparent effect of "language" on the agreement between sessions, as

evidenced by the excellent agreement between the Thai sessions and the English session. There seemed to be no major changes in symptoms during the time between the administration of the questionnaires. The tendency for the English session to agree more with the first Thai session is not clearly explicable in linguistic terms. Possibly, patients' symptoms during the second Thai session might differ slightly more than those occurring during the first Thai session and the English session.

This study is only a preliminary validation study of a Thai version of the KHQ on a subgroup of patients with lower urinary tract symptoms (LUTS). Further studies on other groups of Thai patients as well as on male patients with LUTS should be done in the future. This Thai version of the KHQ, if extensively validated, could be useful as a quality of life outcome measure in studies of LUTS in Thai patients.

Table 4. Questionnaire reliability: agreement between sessions (kappa statistic)

Domains	First Thai session and second Thai session	Second Thai session and English session	First Thai session and English session
1. General health perceptions	0.785	0.860	0.866
2. Impact on life	0.818	0.715	0.825
3. Role limitations			
House hold	0.875	0.908	0.911
ADL	0.810	0.874	0.941
4. Physical limitations			
Physical activities	0.924	0.924	1.00
Travel	0.964	0.894	0.861
5. Social limitations			
Social life	0.889	0.852	0.888
Visit friends	0.957	0.874	0.915
Family life	0.850	0.887	0.888
6. Personal relationship			
Partner	0.971	0.970	0.940
Sex life	0.941	0.942	0.941
7. Emotions			
Depressed	0.853	0.848	0.923
Anxious	0.887	0.852	0.964
Feel bad	0.923	0.882	0.961
8. Sleep/energy			
Sleep	0.967	0.933	0.966
Tired	0.853	0.892	0.966
9. Incontinence severity			
Wear pad	1.00	0.922	0.922
Control fluids	0.965	0.930	0.891
Change underclothes	0.931	0.931	0.931
Smell bad	0.875	0.792	0.909
Embarrassed	0.831	0.967	0.799

Conclusion

The authors developed a Thai version of the KHQ questionnaire, and also tested the reliability of the questionnaire on a group of female patients who had symptoms of overactive bladder. The authors found the Thai version of the KHQ to be reasonably reliable for use in the presented patient sample. The Thai version of the KHQ should be useful as a quality of life outcome measure in studies on lower urinary tract symptoms in Thai patients. The authors recommend further tests of the questionnaire on independent samples of patients.

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Appendix
King's Health Questionnaire in English and Thai
King's Health Questionnaire (KHQ)

- Q 1. How would you describe your health at present?
 Very good(1) Good(2) Fair(3) Poor(4) Very poor(5)
- Q 2. How much do you think your bladder problem affects your life?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 3a. To what extent does your bladder problem affect your household tasks (e.g. cleaning, shopping, etc.)?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 3b. Does your bladder problem affect your job, or your normal daily activities outside the home?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 4a. Does your bladder problem affect your physical activities (e.g. going for a walk, run, sport, gym, etc.)?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 4b. Does your bladder problem affect your ability to travel?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 4c. Does your bladder problem limit your social life?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 4d. Does your bladder problem limit your ability to see/visit friends?
 Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 5a. Does your bladder problem affect your relationship with your partner?
 Not applicable(0) Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 5b. Does your bladder problem affect your sex life?
 Not applicable(0) Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 5c. Does your bladder problem affect your family life?
 Not applicable(0) Not at all(1) A little(2) Moderately(3) A lot(4)
- Q 6a. Does your bladder problem make you feel depressed?
 Not at all(1) Slightly(2) Moderately(3) Very much(4)
- Q 6b. Does your bladder problem make you feel anxious or nervous?
 Not at all(1) Slightly(2) Moderately(3) Very much(4)
- Q 6c. Does your bladder problem make you feel bad about yourself?
 Not at all(1) Slightly(2) Moderately(3) Very much(4)

Q 7a. Does your bladder problem affect your sleep?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 7b. Do you feel worn out/tired?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 8a. Do you wear a pad to keep dry?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 8b. Are you careful about how much fluid you drink?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 8c. Do you change your underclothes when they get wet?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 8d. Do you worry in case you smell?	Never(1)	Sometimes(2)	Often(3)	All the time(4)
Q 8e. Do you get embarrassed because of your bladder problem?	Never(1)	Sometimes(2)	Often(3)	All the time(4)

แบบสอบถามสุขภาพการขับถ่ายปัสสาวะ

King's Health Questionnaire (KHQ)

ฉบับแปลเป็นภาษาไทยและผ่านการประชุมของผู้แปลรวมถึงผ่านการตรวจสอบจากผู้เชี่ยวชาญทางจิตเวชแล้ว

1. คุณคิดว่าสุขภาพของคุณในปัจจุบันเป็นอย่างไร
ดีมาก(1) ดี(2) ปานกลาง(3) แย่(4) แย่มาก(5)
2. คุณคิดว่าปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อชีวิตประจำวันมากแค่ไหน
ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 3 ก. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อกิจวัตรประจำวัน เช่น งานบ้าน การไปจ่ายตลาด และอื่นๆ มากแค่ไหน
ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 3 ข. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อหน้าที่การงาน หรือกิจวัตรประจำวันนอกบ้านหรือไม่
ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 4 ก. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อเรื่องการออกกำลังกาย เช่น การออกไปเดินเล่น วิ่ง เล่นกีฬา และอื่นๆหรือไม่
ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 4 ข. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อการเดินทางหรือไม่
ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)

- 4 ค. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลต่อการเข้าสังคมหรือไม่
 ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 4 ง. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลต่อการที่คุณจะต้องออกไปพบปะสังสรรค์กับเพื่อนหรือไม่
 ไม่เลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 5 ก. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อความสัมพันธ์ของคุณกับคู่นอนหรือไม่
 ไม่ได้ถึง(0) ไม่มีเลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 5 ข. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อกิจกรรมทางเพศหรือไม่
 ไม่ได้ถึง(0) ไม่มีเลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 5 ค. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อชีวิตครอบครัวหรือไม่
 ไม่ได้ถึง(0) ไม่มีเลย(1) น้อย(2) ปานกลาง(3) มาก(4)
- 6 ก. ปัญหาการขับถ่ายปัสสาวะของคุณทำให้คุณรู้สึกมีอาการซึมเศร้าหรือไม่
 ไม่เลย(1) มีบ้าง(2) มีปานกลาง(3) มีอย่างมาก(4)
- 6 ข. ปัญหาการขับถ่ายปัสสาวะของคุณทำให้คุณรู้สึกกังวลหรือหงุดหงิดหรือไม่
 ไม่เลย(1) มีบ้าง(2) มีปานกลาง(3) มีอย่างมาก(4)
- 6 ค. ปัญหาการขับถ่ายปัสสาวะของคุณทำให้คุณรู้สึกไม่ดีกับตัวเองหรือไม่
 ไม่เลย(1) มีบ้าง(2) มีปานกลาง(3) มีอย่างมาก(4)
- 7 ก. ปัญหาการขับถ่ายปัสสาวะของคุณมีผลกระทบต่อการนอนหลับหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)
- 7 ข. คุณรู้สึกท้อแท้หรือเบื่อหน่ายกับปัญหาการขับถ่ายปัสสาวะของคุณบ้างหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)
- 8 ก. คุณต้องใส่ผ้าอนามัยหรืออุปกรณ์รองขับเพื่อป้องกันปัสสาวะเล็ดราดหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)
- 8 ข. คุณต้องระมัดระวังเรื่องปริมาณน้ำที่คุณดื่มหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)
- 8 ค. คุณต้องเปลี่ยนชุดชั้นในเวลาที่มันเปียกปัสสาวะหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)

- 8 ง. คุณรู้สึกกังวลกับกลิ่นปัสสาวะที่เล็ดราดออกมาหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)
- 8 จ. คุณรู้สึกอับอายในเรื่องการขับถ่ายปัสสาวะของคุณหรือไม่
 ไม่เคย(1) บางครั้ง(2) บ่อย(3) ตลอดเวลา(4)

**ความน่าเชื่อถือของ King's Health Questionnaire ฉบับภาษาไทย ในผู้ป่วยหญิงไทยที่มีอาการของ
 กระเพาะปัสสาวะบีบตัวไวเกินปกติ**

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วัตถุประสงค์: เพื่อแปล King's Health Questionnaire (KHQ) เป็นภาษาไทย และทดสอบความน่าเชื่อถือ (reliability) ของ KHQ ฉบับภาษาไทย

วัสดุและวิธีการ: ศัลยแพทย์ уроวิทยาสามท่านร่วมแปล KHQ เป็นภาษาไทย และคณะแพทย์อีกคณะหนึ่งร่วมแปล KHQ ฉบับที่แปลเป็นภาษาไทย กลับเป็นภาษาอังกฤษอีกครั้ง ได้เปรียบเทียบ KHQ แต่ละรูปแบบ เพื่อหาข้อยุติ และสรุปเป็น KHQ ฉบับภาษาไทยที่สมบูรณ์ที่สุด ได้ทดสอบ KHQ ฉบับภาษาไทยและภาษาอังกฤษ ในผู้ป่วยหญิงไทยที่มีอาการของกระเพาะปัสสาวะบีบตัวไวเกินปกติ 50 ราย โดยทดสอบฉบับภาษาไทย 2 ครั้ง และฉบับภาษาอังกฤษ 1 ครั้ง โดยการทดสอบห่างกัน 2 สัปดาห์ ได้วัดความน่าเชื่อถือของ KHQ ฉบับภาษาไทย โดยใช้สถิติ weighted kappa **ผลการศึกษาและสรุป:** KHQ ฉบับภาษาไทยที่ได้พัฒนาขึ้น มีความน่าเชื่อถือ เมื่อนำมาใช้กับผู้ป่วยหญิงไทยที่มีอาการของกระเพาะปัสสาวะบีบตัวไวเกินปกติ
