Development of Needs and Resources for Self-Management Assessment Instrument in Thais with Type 2 Diabetes: Cross-Cultural Adaptation

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Objective: *(1) To develop the Chronic Illness Resources Survey (CIRS) questionnaire for Thais with type 2 diabetes and (2) to examine validity and reliability of the instrument.*
Material and Method: *The present study consisted of two phases, phrase I was development of the comprehensive assessment form, for which the qualitative study was utilized and Glasgow's original CIRS was used as the initial input, and phrases II was tested for validity and reliability of the assessment form, for which quantitative study design was utilized.*
Results: *Final version of Thai comprehensive CIRS composed of 60 items in seven subscales, physician and health care team, family and friends, personal, community, neighborhood, media and policy, and community organization. Worksites subscale was deleted if it differed from original version. Its internal consistency was 0.93 (Cronbach's alpha coefficient = 0.93, $p < 0.05$).*
Conclusion: *The present study demonstrates that the Thai CIRS is appropriate for Thai patients with type 2 diabetes. The instrument has acceptable validity and reliability. However, further research is required to evaluate these properties in other areas. Furthermore, the Thais CIRS should examine psychometric properties before it will be used in other chronic illness patients.*

Keywords: *Self-management assessment, Type 2 diabetes, Cross-cultural adaptation*

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Self-management support is a component in the Chronic Care Model (CCM) that had the strongest evidence supporting its impact on the improved quality of care for chronically ill patients, particularly those with diabetes and hypertension[1]. Patients with chronic illness play a central role in managing factors that contribute to their health and wellbeing[2]. With regards to the treatment of diabetes, the patients must provide their own care[3]. This may be due to the ineffectiveness of the existing self-management support model[4]. Since patients with chronic diseases are not homogeneous, effective self-management support should be individualized to each patient to the extent possible[5]. This individualization should be based on an assessment that takes into account personal attributes and surrounding context that influences each patient's ability to engage in self-management care. The components of self-management include intrapersonal factors, interpersonal processes, institutional factors, community factors and public policy according to the social ecologic theory[6,7]. Valid and reliable assessment tools are, therefore, required for the identification of patient characteristics and the provision of individually matched self-management interventions.

A number of assessment instruments related to self-management already exist, including the Chronic Illness Resources Survey (CIRS)[6], the Resources and Supports for Self-management (RSSM)[8], health literacy, self-efficacy[9,10] and problem-solving skill assessment forms[11]. Most, if not all of them, of these resources were developed outside of Thailand. Chronic disease self-management behaviors and its influencing factors may be contextually specific and the assessment tools developed for patients in other countries may not be directly applicable to the unique needs of Thai patients.

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The purpose of the present study is twofold: (1) To develop the Chronic Illness Resources Survey (CIRS) questionnaire for Thais with type 2 diabetes, and (2) to examine validity and reliability of the instrument.

Material and Method

The present study was composed of two phases for which different study designs were utilized. In phrase 1: development of the comprehensive assessment form, qualitative study was utilized, while in phrase 2: test of validity and reliability of the assessment form, quantitative study design was utilized. Study areas included the King Narai Hospital (Lop Buri, province, Thailand), and King Chulalongkorn Memorial Hospital (Bangkok, Thailand). Approval from Ethics Committees of the participating hospitals was sought before the present study being conducted, and written informed consent was obtained from both patients and their relatives before the data being collected from them.

Phrase I: Development of the comprehensive assessment form

Translation and cross-cultural adaptation

Firstly, the English original version of Chronic Illness Resources Survey (CIRS) questionnaire[6] was forward translated into Thai with permission from the originate author (Glasgow, RE). Then three bilingual experts[12] backward translated the questionnaire into English. Finally, the agreement between the backward-translated and the English original questionnaires were determined by another three bilingual experts who were not involved in the questionnaire translation. An Item-Objective Congruency Index (IOC) showed that more than half of the total scores, which the experts agreed upon, were acceptable[13]. It was then utilized in the cross-cultural adaptation component.

Comprehensive interviews

In addition to the output from literature review and backward and forward translation of the CIRS, input from expert in-depth interviews was also utilized in the development of the draft questionnaire. The interviews were semi-structured, lasting for 30 to 60 minutes per individual, and covered topics about (1) what are unique contributions of Thai socio-cultural and physical environment to generic of needs and resources for self-management support in persons with type 2 diabetes?, (1.1) could you briefly describe characters of (good) self-management behaviors of persons with type 2 diabetes?, (1.2) what major skills, training or formal preparation do you require for your patients/persons to have (good) self-management behaviors?, (1.3) what are the major needs and resources for patients/persons to have self management behaviors?, (1.4) what are the challenges that you face in enhancing patients/persons to have self management behaviors? and (2) what are constructs and items of the comprehensive assessment form in Thais with type 2 diabetes? A team of experts in the field of diabetes care who were interviewed included one endocrinologist, one medicine physician, one pharmacist, three nurse faculties, one health educator, one physiologist and one nutritionist. In addition, 15 Thai patients with type 2 diabetes who had well- and poorly-controlled diabetes from King Narai Hospital (Lop Buri, Thailand) and King Chulalongkorn Memorial Hospital (Bangkok, Thailand) were also interviewed.

Thematic analyses of interview transcriptions were then conducted within an interpretive phenomenological analysis framework. Input from these interviews was used in formulating the concept and scope of self management support for type 2 diabetic patients. Constructs and items for the development of the tool were generated from the qualitative outcome. The derived items were then compared to the items in pre-existing tools obtained from the literature review and experts agreement of the forward and backward translations.

Phrases II: Test of validity and reliability of the instrument

The newly developed instrument was tested for its face and content validity and internal consistency.

The draft of Thai Comprehensive CIRS which was the final product of phrase I was initially pilot-tested among 60 type 2 diabetic patients of Saraburi Hospital (Saraburi province, Thailand) where its size and diabetes care capability were similar to King Narai and King Chulalongkorn Memorial Hospitals. Input from this pilot test was used to adjust the instrument into the final Thai CIRS, which was then used in latter steps of reliability and validity tests in this phrase.

Face and content validity of the instrument was conducted by five diabetes care experts in five areas (one of endocrinologist, behavioral scientist, nutritionist, diabetes nurse, and diabetes researcher). Statistical methods used at this step was the content validity index (CVI), the interpreters reached an

acceptable level of 80% agreement for the content validity index (CVI)[14].

Internal consistency was conducted by 60 type 2 diabetic patients at Saraburi Hospital. Statistical method used at this step was Cronbach's alpha coefficient.

Results

Phase I: Development of the comprehensive assessment form

In cross-cultural adaptation, the IOC showed that more than half of the total scores, which the experts approved ahead, were satisfactory. However, some of the language items in the backward and forward translations of CIRS questionnaires needed revision. Verb, word and phrase were corrected for easier understanding in the following subscales and items: physician and health care team (items 2-6), family and friends (items 16-17), personal (items 18, 22-24 and 27), neighborhood (items 33 and 35), community (items 39, 42-44 and 46), media and policy (items 50, 54, 55 and 58) and community organization (items 61-63). Finally, a-64 items and eight subscales of comprehensive CIRS, similar to the original CIRS, were used in the next phase.

Results from the comprehensive interviews suggested that the items related to type of food, characteristic of family, occupation and community need to be adjusted to better reflect Thai socio-cultural context. Additional 13 items were also added into six subscales, with the totally 77 items in the newly developed tool (Table 1). However, two redundant items in community and media and policy subscales (from original version) were later deleted, the finally derived version of Thai Comprehensive CIRS therefore

Table 1. Compared number of items between original and newly developed Thai Comprehensive CIRS assessment form after comprehensive interviews

Subscales	Number of items		Added items
	Original CIRS	Newly developed Thai Comprehensive CIRS	
Physician and health care team	7	9	2
Family and friends	8	8	0
Personal	8	13	5
Neighborhood	7	8	1
Community	8	10	2
Media and policy	10	12	2
Community organizations	9	9	0
Worksites	7	8	1
Total	64	77	13

Table 2. Compared number of items between before and after face and content validity testing of Thai Comprehensive CIRS assessment form by the expert panel

Subscales	Number of Thai Comprehensive CIRS items for face and content validity testing		Deleted items
	Before	After	
Physician and health care team	9	9	0
Family and friends	8	8	0
Personal	13	13	0
Neighborhood	8	8	0
Community	10	9	1
Media and policy	12	11	1
Community organizations	9	9	0
Worksites	8	8	0
Total	77	75	2

includes totally 75 items within eight subscales of physician and health care team, family and friends, personal, community, neighborhood, media and policy, community organization, and worksites (Table 2).

Phase II: Test of validity and reliability of the instrument

The expert panel judged on relevance and phrasing of the instrument items. For each item, experts could suggest possible improvements in phrasing. Revisions of the instrument were made and discussed each time by the panel members and research until agreement about the content was reached. The results demonstrated that one item of the community, and the media and policy subscales were deleted (Table 2). Seventy-five items with eight subscales were further tested for items and scale psychometric testing.

Sixty patients with diabetes type 2 including 45 females and 15 males, aged between 31 to 81 years old (M = 64.12, SD = 9.49) and years diagnosed between 1 to 30 years (M = 8.28, SD = 6.94) filled out the questionnaires. Characteristics of the present study participants are shown in Table 3.

The analysis of corrected item-total correlations indicated low correlations (near zero) or less than 0.4 were deleted[15] and no significant of t value for 15 items. The deleted items included four items of personnel, three items of media and policy and eight items of worksites. Deleting these items increased the corrected item-total correlations to a value between 0.01 to less than 0.04 and no significant of t value. The final version of the Thai comprehensive CIRS questionnaire was 60 items with seven subscales. The worksites subscale was deleted due to 0.93 Cronbach's alpha coefficient of the subscale, which varied from 0.80 to 0.92. The overall scale has Cronbach's alpha coefficient of 0.93 (Table 4).

Table 3. Demographic characteristics of the study participants (n = 60)

Variables	Number (percentage)
Demographics	
Age	
31-40 years	1 (1.70)
41-50 years	2 (3.30)
51-60 years	18 (30.00)
61-70 years	23 (38.30)
71-80 years	15 (25.00)
More than 81 years	1 (1.70)
M = 64.12, SD = 9.49, Min = 31, Max = 81	
Sex	
Female	45 (75.00)
Male	15 (25.00)
Status	
Single	8 (13.30)
Married	37 (61.70)
Divorce/widow	15 (25.00)
Education	
Primary school	46 (76.70)
Diploma	3 (5.00)
Bachelor's degree	1 (1.70)
Master's degree	1 (1.70)
Other	9 (15.00)
Occupation	
Hired/employee	14 (23.30)
Agriculture	8 (13.30)
Company employee	14 (23.30)
Government officer/pensioner	23 (38.30)
Merchant	1 (1.70)
Disease/medical history	
DM with complication	43 (71.70)
DM without complication	17 (28.30)
Years diagnosed – diabetes	
1-5 years7	27 (45.00)
6-10 years	21 (35.00)
11-15 years	3 (5.00)
16-20 years	6 (10.00)
Years diagnosed – diabetes	
21-25 years	1 (1.70)
More than 26 years	2 (3.30)
M = 8.28, SD = 6.94	

Discussion

The present study demonstrates the development process of Thai CIRS questionnaire that is applicable to Thai patients with type 2 diabetes. It consisted of two phases, (1) the translation and cross-cultural adaptation of the Chronic Illness Resources Survey (CIRS) questionnaire for Thais with type 2 diabetes, and (2) the examination of validity and reliability of the instrument. Cross-cultural adaptation of the Chronic Illness Resources Survey (CIRS) questionnaire was implemented according to the international methodological procedures[16,17]. Furthermore, validity and reliability of the instrument was tested and the results are satisfactory.

The present study applies the social ecologic theory[6,7] to develop Thai CIRS instrument by comparing with the original study[6]. Therefore, the present study demonstrates backward-forward translation and experts' agreement by taking into

Table 4. Corrected item-total correlations (CITC) and internal consistency of the Thai CIRS questionnaire (n = 60)

Items	t	CITC	α if item deleted	Cronbach's alpha	Deleted items
Doctor and healthcare team members				Alpha = 0.89	
In the past three months, to what extent have you received or experienced the following?					
1. Has your physician or healthcare team (nurse or nutritionist) given you clear explanations on how you can manage your illness? If you haven't met your physician in the past three months, think about your previous appointment with him/her	6.06*	0.61	0.96		-
*2. Has your physician or healthcare team (e.g. nurse, nutritionist) placed you in a self management group?	2.80*	0.38	0.96		-
3. Has your physician or healthcare team provided support services between visits such as telephone follow-ups, reminder letters, or newsletter?	2.49*	0.23	0.96		-
4. The original is quite hard to change. So, you would better keep that vision.	3.71*	0.46	0.96		-
5. Has your physician or healthcare team listened to your explanation of your symptoms carefully?	5.33*	0.57	0.96		-
6. Has your physician or healthcare team (nurse or nutritionist) answered your questions and responded to your visit?	3.99*	0.43	0.96		-
7. Has your physician or healthcare team (nurse or nutritionist) explained the results of your physical checkup thoroughly?	5.08*	0.4	0.96		-
*8. Have you received information or advice from any any health centers, or hospitals near your house?	3.43*	0.37	0.96		-
9. How important for your illness are healthcare team resources management?	4.74*	0.44	0.96		-
Family and friends				Alpha = 0.93	
In the past three months, to what extent have you received or experienced the following?					
10. Have your family or friends exercised with you?	4.06*	0.42	0.96		-
11. Have your family or friends listened to you attentively when you are talking about your illness?	4.92*	0.54	0.96		-
12. Have your family or friends encouraged you to do what you need to for your illness?	5.46*	0.65	0.96		-
13. Did your family or friends order healthy food when you ate with them?	6.11*	0.65	0.96		-
14. Have you shared low-fat recipes with your friends or family members?	6.75*	0.59	0.96		-
15. Have your family or friends helped you remember the time to take your medicine?	5.33*	0.62	0.96		-
16. Have your family or friends bought or prepared specially healthy or recommended food for you?	7.43*	0.74	0.96		-
17. How important is the support from your family and friends for your illness management?	6.65*	0.73	0.96		-
18. Have you spared time to do what you enjoyed?	5.78*	0.69	0.96		-
19. Have you congratulated or rewarded yourself for what you did to manage your illness?	7.20*	0.67	0.96		-
20. Have you focused on the things you did well in your illness management instead of those you did not?	4.99*	0.59	0.96		-

* Item was added in original version from in-depth interview

Table 4. (continued)

tems	t	CITC	α if item deleted	Cronbach's alpha	Deleted items
21. Have you told others the ways they can help with your illness management?	8.04*	0.78	0.96		-
22. Have you thought about or reviewed how you were doing in accomplishing your disease management goals?	4.75*	0.64	0.96		-
*23. Do you think carbohydrates or dessert foods increase your blood sugar?	1.74	0.23	0.96		/
*24. Do you think herbal medicine can improve a diabetic patient's health condition?	1.86	0.12	0.96		/
*25. Do you think proper management of your health (e.g. diabetes drug use, healthy eating habits, exercise and follow-up treatment) will control your diabetes?	1.94	0.23	0.96		/
*26. Do you believe you can control your diabetes through gaining information about diabetes and adopting good health behavior?	2.96*	0.4	0.96		-
*27. Do you feel empowered to manage your own diabetes?	4.33*	0.56	0.96		-
28. Have you used prayer or meditation to guide yourself in your illness management?	1.67	0.24	0.96		/
29. Have you arranged your schedule so that you could more easily do things you needed to do for your illness management?	2.72*	0.48	0.96		-
30. How important are the above in your illness management?	2.27*	0.45	0.96		-
Neighborhood				Alpha = 0.94	
Over the past 3 months, to what extent…					
31. Have you walked or exercised outdoors in your neighborhood?	3.54*	0.55	0.96		-
32. Have you talked to your neighbors or other people who experienced a chronic illness?	6.88*	0.71	0.96		-
33. Have you and your neighbors done activities together such as eating or having a party on weekends?	8.59*	0.68	0.96		-
34. Have the markets or grocery stores where you shopped had enough supply of fresh fruits and vegetables?	6.18*	0.63	0.96		-
35. Have you walked or done other exercises with your neighbors?	5.82*	0.72	0.96		-
36. Have you exchanged food recipes or talked about healthy eating ideas with your neighbors?	5.99*	0.68	0.96		-
*37. Has your neighborhood helped you manage your diabetes?	5.59*	0.61	0.96		-
38. How important is the support from your neighborhood for your illness management?	6.04*	0.64	0.96		-
Community				Alpha = 0.87	
In the past three months, to what extent have you done the following?					
39. Have you been to a drugstore that has beneficial information about your illness?	2.61*	0.32	0.96		-
40. Have you noticed healthy low-fat foods at a store where you often shop?	3.85*	0.43	0.96		-
41. Has your community tried to bring together a group or organization of people with a chronic illness in a public service activity?	6.20*	0.6	0.96		-

* Item was added in original version from in-depth interview

Table 4. (continued)

tems	t	CITC	α if item deleted	Cronbach's alpha	Deleted items
*42. Has your community arranged financial support to assist people with diabetes?	3.06*	0.32	0.96		-
43. Have you found that people in the community accepted you and others who have a chronic illness?	4.69*	0.47	0.96		-
44. Have you eaten at a restaurant which sold various types of tasty low-fat foods?	5.45*	0.59	0.96		-
45. Have you gone to parks for a picnic, or an outing?	6.13*	0.59	0.96		-
*46. Is there health information available in your community to help you with self management care?	5.86*	0.59	0.96		-
47. How important is the community environment for your illness management?	3.78*	0.45	0.96		-
Media and policy				Alpha = 0.87	
In the past three months……					
48. Have you read articles in newspapers or magazines about people who were successful in their management of a chronic illness?	4.52*	0.5	0.96		-
49. Have you had a health insurance that covered most of your medical expenses including medicine?	1.23	0.15	0.96		/
50. Have you seen billboards or other advertisements that promoted quitting smoking, eating low-fat foods, or regular exercise?	3.86*	0.58	0.96		-
51. Have you listened to television or radio programs on health or lifestyle issues?	4.99*	0.61	0.96		-
52. Have you read news in newspapers that promoted your self-care?	7.06*	0.68	0.96		-
53. Have you used the Internet or websites to search for or exchange information about your illness?	-0.47	0.01	0.96		/
54. Have you watched television programs or listened to radio programs that were about how to realistically live with a chronic illness?	6.08*	0.71	0.96		-
55. Have you watched television programs or listened to radio programs that gave good information about your illness?	7.31*	0.74	0.96		-
*56. Did the government provide you with a device to test your blood sugar?	7.07*	0.69	0.96		-
*57. Do you think every health care scheme receives the same quality of care?	1.46	0.25	0.96		/
58. How important is the media or policy-related support (as previously mentioned) for your illness management?	5.66*	0.64	0.96		-
Community organizations				Alpha = 0.91	
In the past three months, to what extent have you received or done the following?					
59. Have you called a national or local health organization (such as a health hotline) to ask for information about your illness?	2.31*	0.25	0.96		-
60. Have your colleagues or other organizations of which you were a member show understanding or support of your illness management?	4.38*	0.5	0.96		-
61. Have you taken part in walks or other activities for health organizations (such as heart disease, pulmonary disease association, rheumatism, or diabetes mellitus association)?	5.39*	0.48	0.96		-

* Item was added in original version from in-depth interview

Table 4. (continued)

tems	t	CITC	α if item deleted	Cronbach's alpha	Deleted items
62. Have you attended free or low-cost meetings (such as weight watchers, and hospital programs) that supported your illness management?	5.15*	0.53	0.96		-
63. Have you volunteered your time for local organizations or missions?	5.54*	0.52	0.96		-
64. Have you participated in wellness or an exercise program?	6.29*	0.54	0.96		-
65. Have you called or gone to a local health organization or hospital to search for information, watch a video, or ask for pamphlets?	4.56*	0.53	0.96		-
66. Have you used community resources to manage your illness such as a senior citizen clubs, community centers, or walking for health programs?	6.97*	0.62	0.96		-
67. How important is the health organization or community for your illness management?	4.14*	0.52	0.96		-
Workplace				Alpha = 0.96	
In the past three months, to what extent have you received or done the following?					
68. Have you had a flexible schedule that you could adjust to suit your needs?	0.03	0.2	0.96		/
69. Has your workplace provided wellness programs or fitness facilities?	0.04	0.22	0.96		/
70. Has your workplace had rules or policies that made your illness management easier (such as no smoking rules, and time off for exercise)?	0.03	0.18	0.96		/
71. Have your colleagues covered for you where you needed to do something for your illness management or were not feeling well?	0.04	0.12	0.96		/
72. Have you had control over your work in terms of making decisions or setting priorities?	0.03	0.15	0.96		/
73. Has your employer allowed paid leave for healthcare or exercise?	0.03	0.15	0.96		/
*74. Has good role model leader of diabetes self management in your organization?	0.03	0.1	0.96		/
75. How important are workplace support and resources for your illness management?	0.03	0.22	0.96		/

* Item was added in original version from in-depth interview

account the instrument concept and language/cultural appropriateness[18]. Moreover, the present study applies in-depth interviews based on an assessment that takes into account personal attributes and surrounding contexts that influences the ability of Thai type 2 diabetic patients to engage in self-management.

Finally, the Thai CIRS instrument consists of 60 items with seven subscales. The deleted items include four items of personnel, three items of media and policy, and eight items of worksites because most participants are older more than 60 years old (M = 64.12, SD = 9.49) (Table 3) according to Jitapunkul, S, & Chayovan, N (2001)[19] who showed that diabetes is a common cause of death among Thai elderly. Furthermore, four items of personnel subscale were deleted because they were general. Those items included carbohydrates or dessert foods, which increase their blood sugar, proper management of their health, which will control their diabetes, and three items of media and policy. Those three items were deleted because the items were not real

situations in Thai culture. They were the internet, heath insurance, and taking care of themselves.

Whenever, Cronbach's alpha coefficient of the Thai CIRS instrument is 0.97 that is better than the original study (Cronbach's alpha coefficient = 0.90)[6] but should be implemented in another patients or areas to show efficiency of the Thai CIRS instrument.

Conclusion

The Thai Comprehensive CIRS questionnaire is applicable to Thai patients with type 2 diabetes. It has satisfactory validity and reliability, however further research is required to evaluate these properties in other areas, and the Thais CIRS should examine psychometric properties before it will be used in other chronic illness patients.

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Potential conflicts of interest

None.

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เครื่องมือประเมินความต้องการและแหล่งสนับสนุนการจัดการดูแลตนเองในคนไทยที่เป็นโรคเบาหวานชนิดที่ 2: ดัดแปลงตามวัฒนธรรมท้องถิ่น

อนัญญา มานิตย์, อรัญญา ตุ้ยคำภีร์, วิโรจน์ เจียมจรัสรังษี, สุรศักดิ์ ฐานีพานิชสกุล

วัตถุประสงค์: *(1) เพื่อแปลและดัดแปลงแบบข้ามวัฒนธรรมของแบบประเมินความต้องการและแหล่งสนับสนุนด้านการจัดการดูแลตนเองในคนไทยที่เป็นโรคเบาหวานชนิดที่ 2 (2) เพื่อตรวจสอบคุณภาพของเครื่องมือในเชิงจิตมิติ*

วัสดุและวิธีการ: *การศึกษาครั้งนี้ประกอบด้วย 2 ระยะ (การดัดแปลงแบบข้ามวัฒนธรรมของและการตรวจสอบความถูกต้อง) การดัดแปลงแบบข้ามวัฒนธรรมประกอบด้วย กระบวนการแปลกลับ-แปลไปข้างหน้าและการศึกษาเชิงคุณภาพในประชากรกลุ่มเป้าหมาย การตรวจสอบความถูกต้องของเครื่องมือเป็นการเก็บรวบรวมข้อมูลเชิงปริมาณเพื่อประเมินคุณภาพเชิงจิตมิติและการประเมินโดยใช้สถิติการวิจัย*

ผลการศึกษา: *เครื่องมือประเมินความต้องการและแหล่งสนับสนุนด้านการจัดการดูแลตนเอง ฉบับภาษาไทย ประกอบด้วย ข้อคำถามจำนวน 60 ข้อ 7 ด้าน (แพทย์และทีมสุขภาพ ครอบครัวและเพื่อน ตนเอง ชุมชน เพื่อนบ้านและแหล่งที่อยู่อาศัย สื่อและนโยบาย และองค์กรในชุมชน) นอกจากนั้นผลการศึกษายังพบว่า การแปลและการดัดแปลงแบบข้ามวัฒนธรรมเป็นกระบวนการที่ถูกต้อง และเชื่อถือได้ในการตรวจสอบเครื่องมือประเมินนี้ ในคนไทยที่เป็นโรคเบาหวานชนิดที่ 2*

สรุป: *จากการศึกษาครั้งนี้พบว่าแบบประเมินความต้องการและแหล่งสนับสนุนด้านการจัดการดูแลตนเองในคนไทยที่เป็นโรคเบาหวานชนิดที่ 2 มีความถูกต้องและความเชื่อถือได้ อย่างไรก็ตามควรมีการนำเครื่องมือประเมินนี้ไปตรวจสอบคุณภาพกับผู้ป่วยโรคเบาหวานแหล่งอื่น ๆ ต่อไป และหากต้องการนำเครื่องมือนี้ไปใช้กับผู้ป่วยโรคเรื้อรังอื่น ๆ ควรมีการปรับข้อคำถามให้เข้ากับผู้ป่วยโรคเหล่านั้นก่อนใช้*