Validity and Reliability Study of the Thai Version of WHO Schedules for Clinical Assessment in Neuropsychiatry Version 2.1

Suchat Paholpak MD*,
Thawatchai Krisanaprakornkit MD*, Nawanant Piyavhatkul MD*,
Suwanna Arunpongpaisal MD*, Poonsri Rangseekajee MD*,
Niramol Pajanasoontorn MD*, Jiraporn Khiewyoo PhD**,
Surapol Virasiri MD*, Kanida Tassaniyom MD*

** Department of Psychiatry, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*
*** Department of Biostatistics and Demography, Faculty of Public Health, Khon Kaen University, Khon Kaen, Thailand*

Objective: *To determine the validity and reliability of the Thai version of WHO Schedule for Clinical Assessment in Neuropsychiatry (SCAN) version 2.1.*

Material and Method: *The SCAN interview book version 2.1 was translated from English into Thai. The content validity of the translation was verified by examining the back-translation. Whenever inconsistencies were encountered, the Thai version was adapted to convey the meaning of the original. The revised Thai version was then field-tested in 4 regions of Thailand for comprehensibility of the relatively technical language. Re-edition of the Thai version was made in accordance with suggestions from the field trial. The complete SCAN Thai version was put into the computerized I-Shell program for inter and intra-rater reliability study.*

Results: *Based on the response from Thai subjects and consultations with competent and well SCAN-trained psychiatrists, content validity was established. The inter- and intra-rater agreement of somatoform and dissociative symptoms module were 0.77, 0.85; anxiety: 0.79, 0.84; mood: 0.80, 0.86; eating disorders: 0.73, 0.76; use of alcohol: 0.66, 0.82; stress and adjustment disorders: 0.90, 0.94; psychosis: 0.68, 0.76; cognitive impairment: 0.72, 0.78 and observed behavior, affect and speech module were 0.45 and, 0.51 respectively.*

Conclusion: *The SCAN version 2.1 Thai version proved to be a reliable tool for assessing psychiatric illness among Thais.*

Keywords: *Reliability, Validity, Schedules for clinical assessment in neuropsychiatry, SCAN, Semi-structured interview*

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Diagnosis in psychiatric disorders is dependent on the knowledge, skill and experience of each psychiatrist. Only a few laboratory tests can confirm certain diagnosis. Due to the idiosyncratic and variable manner in which information is expressed by patients and/or understood by the psychiatrist, it is uncertain whether several psychiatrists or even the same psychiatrist rating/re-rating the same patient will interpret the same symptoms and/or signs consistently[1,2]. Then clinical assessment and administration of the instruments are critical tools for accurate diagnosis and differential diagnosis of mental disorders[3].

Many interview formats have been developed to facilitate the interviewing of psychiatric patients; for example, Structured Clinical Interview for DSM-IV (SCID)[4], The Mini-International Neuropsychiatric Interview (MINI)[5], Composite International Diagnostic Interview (CIDI)[6] and the WHO Schedules for Clinical Assessment in Neuropsychiatry (SCAN)[7,8]. SCAN is a semi-structured diagnostic-interview protocol with validated inter-rater reliability to help psychiatrists interview, assess, measure and classify psychopathology and behaviour, according to the ICD-10 diagnostic system[9], with the major psychiatric disorders among adults. SCAN is the international

Correspondence to: Paholpak S, Department of Psychiatry, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand. Phone & Fax: 043-348-384. E-mail: suchat_p@kku.ac.th

gold standard for verifying interview-diagnoses done through clinical trials and other forms of psychiatric research[10].

Thailand has neither its own national nor a translated international standard psychiatric diagnostic instrument. Furthermore, about 10.1% of the Thai population had some psychiatric disorders. The prevalence of psychotic disorder was 1.2%, major depressive disorder 3.2%, generalized anxiety disorder 1.9% and alcohol use disorder 28.5%[11]. Many psychiatric disorders are associated with high functional impairment[12] and costly to treat[13]. As researchers tried to make changes in policy and service configuration in order to improve effective care, accurate diagnosis is the much importance[14]. The authors' aims were to translate WHO-SCAN into Thai, examine the content validity and then test the reliability.

Material and Method

The SCAN interview book version 2.1[15], permitted from the WHO, was translated from English into Thai. The content validity of the translation was verified by comparing the back-translation with the English original version. In case of incompatibility, the Thai version was corrected until the back translation yielded the same meaning as the original version. The revised Thai version was then field-tested in 4 regions of Thailand (Suanprung Psychiatric Hospital, Chiang Mai; Jitavejkhonkaen Hospital, Khon Kaen; Srithanya Hospital, Nondhaburi and Suansaranrom Hospital, Surat Thani; each place comprised 20 volunteers) for comprehensibility of the relatively technical language. Reflections, comments and suggestions were assessed and summarized during a consensus meeting for making a fine tune for the Thai version of SCAN. The final Thai version was incorporated into the SCAN I-shell computer program and used for reliability testing.

The reliability studies were carried out during October 2004-September 2008 at the Department of Psychiatry, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. To establish the inter and intra-rater reliability, SCAN was divided into 9 modules: somatoform and dissociative symptoms module, anxiety, mood, eating disorders, use of alcohol, stress and adjustment disorders, psychosis, cognitive impairment, and observed behavior, affect and speech module. Each module was tested separately. In each module, 15 symptom-relevant patients and 15 normal controls were interviewed by a psychiatrist competent in SCAN. Video tape recordings were done in all interviews and used for reliability rating. Patients and controls had to be volunteers, Thai, $\geq$ 14 years of age, able to understand and speak Thai and give the informed consent before participating in the interviews. The patients were from Psychiatry Department's In/Out patients and were identified using ICD-10 or DSM-IV-TR criteria. The normal volunteers were relatives or workers in the hospital. The Khon Kaen University Ethics Committee reviewed and approved the present study protocol.

To test the intra-rater reliability, a psychiatrist (trained in SCAN) used the Thai version of the relevant module of SCAN to rate and re-rate the video taped interviews in two weeks apart. The inter-rater reliability study was accomplished by two psychiatrists (trained in SCAN) rated the video recordings simultaneously or at different times and comparing the results.

Statistical analysis

The inter- and intra-rater reliability was based on agreement between raters by using descriptive statistics. Rating scale for SCAN were treated as categorical data (*i.e.* 0, 1, 2, 3, 5, 8, 9 indicating absence, transitory, definitely present on multiple occasions, continuously present, language difficulty makes replies difficult to interpret, not sure whether present or absent, inappropriate to rate because of incomplete examination respectively). Calculation used the kappa (κ) statistic (STATA 7.0). The defined level for the degree of agreement was: "poor" ($\kappa < 0$); "slight" (κ = 0-0.20); "fair" (κ = 0.21-0.40); "moderate" (κ = 0.41-0.60); "substantial" (κ = 0.60-0.80) and "almost perfect" agreement (κ = 0.81-1.0)[16].

Results

Eighty Thai volunteers were interviewed as a field trials, and elicited their understanding of the terms used in the Thai version of SCAN. All of the comments and suggestions for comparable meanings using local idioms were gathered and the most appropriate (*i.e.* conserving the original meaning) chosen. Examples of some fine tuning would be acquired by contacting the corresponding author.

The mean kappa of each module was as the following: the inter- and intra-rater agreement of somatoform and dissociative symptoms module were 0.77, 0.85; anxiety: 0.79, 0.84; mood: 0.80, 0.86; eating disorders: 0.73, 0.76; use of alcohol: 0.66, 0.82; stress and adjustment disorders: 0.90, 0.94, psychosis: 0.68, 0.76; cognitive impairment: 0.72, 0.78 and observed

behavior, affect and speech module were 0.45 and, 0.51 respectively.

The mean, SE and 95% confident interval of the mean value of kappas of each module are shown in Table 1. Regarding inter-rater reliability, mean kappa value of observed behavior, affect and speech module was in moderate level; somatoform and dissociative, anxiety, mood, eating disorders, use of alcohol, psychosis, cognitive impairment modules, substantial level; and stress and adjustment disorders modules, almost perfect level. Vis-a vis intra-rater reliability, mean kappa value of observed behavior, affect and speech module was in moderate level; eating disorders, psychosis, and cognitive impairment modules, substantial level; somatoform and dissociative, anxiety, mood, use of alcohol, stress and adjustment disorders modules, almost perfect level.

Discussion

During the field trial, the authors found that respondents with as little as 4 years of elementary education were able to understand and respond to the SCAN interview; thereby confirming reports of SCAN's cross cultural utility[17,18]. Most modules had reliability, both inter-rater and intra-rater, in substantial and almost perfect level. Stress and adjustment disorders module had the highest (almost perfect) inter- and intra-rater reliability (0.90 and 0.94 respectively). Only observed behavior, affect and speech module had inter and intra rater agreement in moderate level. The high inter- and intra-rater reliability in each module was perhaps due to the: 1) high content validity of SCAN Thai version, 2) comprehensibility, 3) strict adherence to the rating criteria, or 4) good training in SCAN interview and glossary. With the high validity and reliability different clinicians with adequate training in using the Thai version of SCAN can minimize the variabilities that occur in the diagnostic process and maximize the replicability of diagnoses and the discrimination of patients[19]. With these good characteristics particularly in clinical setting, the Department of Psychiatry, Faculty of Medicine, Khon Kaen University has set a training and reference center of SCAN in order to expand knowledge about SCAN in Thailand.

During the reliability study, the participants were only recruited from Srinagarind Hospital (a university tertiary care hospital in northeastern Thailand). Linguistic comprehension difficulties may still be found though a even pre-reliability study field trial had been conducted. Some symptoms were rarely found among Thai patients such as thought echo, this might reflect some cultural effect or language problem. The concurrent validity with clinical interview by an experienced psychiatrist was not done due to it being beyond the purpose of the present study. A further concurrent study should be done. In conclusion: The Thai version of SCAN was tested for its content validity and reliability. The inter- and intra-rater agreements were consistently strong. A WHO endorsed training and reference center for SCAN-Thai version has been settled at the Department of Psychiatry, Faculty of Medicine, Khon Kaen University.

Table 1. Inter- and intra-rater reliability values (kappa) of each module

Modules	Reliability					
	Inter-rater			Intra-rater		
	Mean	SE	95% CI	Mean	SE	95% CI
Somatoform and dissociative	0.77	0.03	0.72-0.83	0.85	0.02	0.81-0.89
Anxiety	0.79	0.02	0.74-0.84	0.84	0.02	0.79-0.89
Mood	0.80	0.02	0.77-0.83	0.86	0.01	0.84-0.88
Eating disorders	0.73	0.02	0.68-0.77	0.76	0.03	0.70-0.08
Use of alcohol	0.66	0.03	0.59-0.73	0.82	0.02	0.78-0.86
Stress and adjustment disorders	0.90	0.02	0.87-0.93	0.94	0.02	0.92-0.96
Psychosis	0.68	0.02	0.63-0.71	0.76	0.02	0.73-0.79
Cognitive impairment	0.72	0.03	0.67-0.77	0.78	0.02	0.74-0.82
Observed behavior, affect and speech	0.45	0.05	0.35-0.55	0.51	0.05	0.40-0.06

SE = standard error of mean
95% CI = 95% confidence interval

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ความแม่นตรงและความเชื่อถือได้ของ WHO Schedules for Clinical Assessment in Neuropsychiatry Version 2.1

สุชาติ พหลภาคย์, ธวัชชัย กฤษณะประกรกิจ, นวนันท์ ปิยะวัฒน์กูล, สุวรรณา อรุณพงค์ไพศาล, พูนศรี รังษีขจี, นิรมล พัจนสุนทร, จิราพร เขียวอยู่, สุรพล วีระศิริ, กนิดา ทัศนิยม

วัตถุประสงค์*: เพื่อทดสอบความแม่นตรง และความเชื่อถือได้ของแบบสัมภาษณ์ WHO Schedules for Clinical Assessment in Neuropsychiatry (SCAN) version 2.1 ฉบับภาษาไทย*

วัสดุและวิธีการ*: แปลแบบสัมภาษณ์ SCAN version 2.1 จากภาษาอังกฤษเป็นภาษาไทย ตรวจสอบว่าแปลได้ความหมายตรงหรือไม่ ด้วยการนำฉบับภาษาอังกฤษที่ได้จากการแปลกลับจากภาษาไทย ไปเปรียบเทียบกับต้นฉบับที่เป็นภาษาอังกฤษ ถ้ามีการแปลได้ไม่ตรงกับความหมายเดิม ก็จะแก้ไขฉบับภาษาไทย จนได้ความหมายตรงกับต้นฉบับ นำ SCAN ภาคภาษาไทยที่แก้ไขแล้วไปสัมภาษณ์อาสาสมัครภาคสนามใน 4 ภูมิภาคของประเทศ เพื่อตรวจสอบความเข้าใจคำศัพท์ต่าง ๆ นำความเห็นที่ได้จากอาสาสมัครมาเป็นส่วนประกอบในการแก้ไข SCAN ภาคภาษาไทย บรรจุ SCAN ฉบับภาษาไทยที่สมบูรณ์ไว้ในโปรแกรม I-Shell เพื่อการศึกษาความเชื่อถือได้ทั้งชนิด inter-rater และ intra-rater ต่อไป*

ผลการศึกษา*: จากคำตอบที่ได้รับจากกลุ่มตัวอย่างและจากการประเมินของจิตแพทย์ที่มีความชำนาญในการใช้ SCAN พบว่า SCAN ภาคภาษาไทยมีเนื้อหาที่แม่นตรง ค่า inter และ intra-rater reliability ของหมวดอาการ somatoform และ dissociative คือ 0.77 และ 0.85 หมวดวิตกกังวล คือ 0.79 และ 0.84 หมวดอารมณ์คือ 0.80 และ 0.86 หมวดความผิดปกติของการกินคือ 0.73 และ 0.76 หมวดการใช้แอลกอฮอล์คือ 0.66 และ 0.82 หมวดความเครียดและความผิดปกติของการปรับตัวคือ 0.90 และ 0.94 หมวดโรคจิต คือ 0.68 และ 0.76 หมวด cognitive impairment คือ 0.72 และ 0.78 หมวดพฤติกรรม การแสดงอารมณ์และการพูดตามที่สังเกตพบคือ 0.45 และ 0.51 ตามลำดับ*

สรุป*: SCAN ฉบับ 2.1 ภาคภาษาไทยเป็นเครื่องมือที่มีความเชื่อถือได้ในการประเมินการเจ็บป่วยทางจิตเวชในคนไทย*