

Translation and Psychometric Validation of the Thai Version of the Burnout Clinical Subtype Questionnaire-12 Student Survey (BCSQ-12-SS)

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Objective: To translate the Burnout Clinical Subtype Questionnaire-12 Student Survey (BCSQ-12-SS) into Thai and to examine its psychometric properties.

Materials and Methods: The BCSQ-12-SS was translated into Thai using forward-backward translation by the research team. Participants were medical students in years 1 to 6 at Thammasat University. Socio-demographic data, including sex, age, year of study, and grade point average (GPA), were collected along with responses to the Thai version of the BCSQ-12-SS. Known-group validity was assessed by comparing pre-clinical and clinical students. Confirmatory factor analysis (CFA) was conducted to evaluate factor validity. Internal consistency was assessed using Cronbach's alpha, and test-retest reliability was examined with intraclass correlation coefficients (ICC).

Results: Two hundred five students completed the survey, yielding a response rate of 64%. For known-group validity, clinical students reported significantly higher BCSQ-12-SS scores than pre-clinical students (42.7 ± 13.0 versus 37.6 ± 11.8 , $p=0.004$). CFA demonstrated strong item loadings and acceptable model fit indices. Internal consistency was good, with Cronbach's alpha of 0.70 or higher for all subscales and the total score. Test-retest reliability was excellent, with ICC values ranging from 0.94 to 0.96.

Conclusion: The Thai version of the BCSQ-12-SS demonstrated acceptable validity and excellent reliability, supporting its use as a practical tool for assessing burnout among Thai students.

Keywords: Burnout; Students; Burnout clinical subtype questionnaire; BCSQ

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Burnout is a psychological phenomenon that was originally observed in service professions, in which affected individuals experienced emotional fatigue, depersonalization, and a lack of personal development^(1,2). The World Health Organization's International Disease Classification (ICD-11) has redefined burnout as a syndrome that results from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job,

or feelings of negativism or cynicism related to one's job; and reduced professional efficacy^(2,3).

Burnout has also been observed in university students, particularly those who are training to become healthcare providers, such as medical students. Studies from the United States have found that half of medical students experience burnout during training and that it is related to psychiatric disorders and suicidal ideation^(4,5). Studies from China have also revealed that more than 40% of medical students experience burnout, which is higher than the normal population⁽⁶⁾.

The "Burnout Clinical Subtype" and the "Burnout Clinical Subtype Questionnaire" (BCSQ-36) were developed as a newer and broader definition of burnout to adjust lines of therapeutic action for more effectiveness⁽⁷⁾. The burnout clinical subtype understands burnout as having different stages and causes rather than a uniform entity with consistent etiology and symptoms in all individuals. It differentiates between three clinical subtypes of burnout that vary based on the level of dedication

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to work. The “frenetic” subtype, characterized by investing a large amount of time in working, is typical of people who are very involved, ambitious, and overloaded. The under-challenged subtype is characterized by indifference, boredom, and a perceived lack of personal development. The “worn-out” subtype is characterized by the feeling of losing control over outcomes, the perceived lack of recognition of one’s own efforts, and the giving up of responsibilities. This framework views burnout as a progressive process marked by a gradual erosion of dedication to work, evolving from initial enthusiasm to eventual apathy^(7,8).

The BCSQ-36 is a specialized instrument developed to address limitations of the traditional burnout measure, the Maslach Burnout Inventory (MBI). The classical MBI framework may fail to adequately identify the frenetic profile: students who are highly involved, ambitious, and overloaded. Such individuals may score high on emotional exhaustion while also reporting high personal efficacy, potentially obscuring burnout when assessed using traditional metrics. In contrast to the MBI, which offers a cross-sectional snapshot of burnout symptoms, the BCSQ conceptualizes burnout as a dynamic process involving successive stages of progressively diminished commitment, ranging from high involvement to eventual neglect. This conceptual framework helps educators and clinicians better understand the underlying psychological state of students^(8,9).

The short version of the Burnout Clinical Subtype Questionnaire-12 (BCSQ-12) was developed for the rapid identification of burnout. Its dimensions—overload, lack of development, and neglect—correspond to the frenetic, underchallenged, and worn-out subtypes, respectively. A student version, the Burnout Clinical Subtype Questionnaire-12 Student Survey (BCSQ-12-SS), was later developed and validated in student populations. The BCSQ-12-SS has demonstrated good psychometric properties, including internal consistency, factorial validity, and convergent validity^(9,10). However, it has not yet been translated into Thai. Such a measure would be valuable for both clinical assessment and the management of burnout. Therefore, the present study aimed to translate the BCSQ-12-SS into Thai and to evaluate its validity and reliability.

MATERIALS AND METHODS

Participants

This cross-sectional study included medical

students from Thammasat University enrolled in academic years 1 to 6 during the 2020 academic year and used a convenience sampling method. Eligible participants were students aged 18 years or older. The survey was distributed online via Google Forms between June 2020 and January 2021. Of the 320 eligible students, 205 completed the survey. Participation was voluntary and anonymous. The study protocol was approved by the Ethics Committee of Thammasat University (MTU-EC-OO-0-034/63).

Measurements

Socio-demographic data were collected, including sex, age, year of study, and grade point average (GPA).

The BCSQ-12-SS underwent a linguistic validation process. Forward translation from English to Thai was independently performed by a psychiatrist and bilingual medical students. A professional translator then performed a back-translation into English. The translated versions and the original questionnaire were compared, and discrepancies were resolved through consensus by the research team to produce the final Thai version. The Thai BCSQ-12-SS was pilot-tested in a sample of 10 students before administration to the study participants. The BCSQ-12-SS consists of 12 items, with four items corresponding to each dimension: overload, lack of development, and neglect. Each item is rated on a 7-point Likert scale ranging from 1 “completely disagree” to 7 “completely agree”, with higher scores indicating greater burnout.

Statistical analysis

Data were analyzed using Stata Statistical Software, version 17 (StataCorp LLC, College Station, TX, USA). Descriptive statistics were used to summarize participant characteristics. Known-group validity was examined by comparing mean BCSQ-12-SS scores between pre-clinical (years 1 to 3) and clinical (years 4 to 6) students using independent t-tests, with results illustrated using violin plots. Based on previous studies, clinical students were expected to demonstrate higher burnout levels than pre-clinical students⁽⁵⁾.

Confirmatory factor analysis (CFA) was conducted to assess the factor validity of the Thai version of the BCSQ-12-SS. The model tested consisted of 12 items loading onto three factors, consistent with the original English version. Standardized factor loadings were examined. Model fit was evaluated using the root mean square error

of approximation (RMSEA) and the comparative fit index (CFI).

Internal consistency of each subscale and the total score was assessed using Cronbach's alpha. Test-retest reliability was evaluated in a subsample of 20 participants using intraclass correlation coefficients (ICC). Finally, associations between socio-demographic characteristics and total BCSQ-12-SS scores were analyzed using multivariable linear regression. A two-sided p-value of less than 0.05 was considered statistically significant.

Sample size estimation was based on the rule of thumb that factor analysis requires a minimum of approximately 10 participants per item⁽¹¹⁾. Therefore, with 12 items in the BCSQ-12-SS, a sample size of at least 120 participants was considered adequate for CFA.

RESULTS

Characteristics of the study participants

Two hundred and five students completed the survey, yielding a response rate of 64%. Participants' ages ranged from 17 to 28 years, with a mean age of 21.5 years. Women comprised 63.4% of the sample. Among the participants, 53.7% were in the pre-clinical years (years 1 to 3), while 46.3% were in the clinical years (years 4 to 6). The characteristics of the study participants are presented in Table 1.

For known-group validity, the total BCSQ-12-SS score was significantly higher among clinical compared with pre-clinical students (42.7 ± 13.0 versus 37.6 ± 11.8 , $p=0.004$), which was consistent with the hypothesis. Figure 1 illustrates the distribution of total BCSQ-12-SS scores between pre-clinical and clinical students using violin plots.

Factor validity

CFA was conducted to test the three-factor model with 12 items (Figure 2, 3). Most items demonstrated strong standardized factor loadings (0.70 or greater). Only items 1, 2, and 7 showed factor loadings between 0.48 and 0.53, which are considered acceptable. All factor loadings were statistically significant ($p < 0.001$).

Regarding model fit, the RMSEA was 0.10, indicating a slightly poor fit compared with the conventional cutoff of 0.08. However, the CFI was 0.91, exceeding the commonly accepted threshold of 0.90, suggesting an overall adequate fit. Correlations between the three constructs were moderate, ranging from 0.32 to 0.64. A second-order CFA indicated that the factor loading for the overload construct (0.43)

Table 1. Characteristics of the study participants (n=205)

Variables	Value
Sex; n (%)	
Female	130 (63.4)
Male	75 (36.6)
Age (years); mean [SD]	21.5 [1.9]
(min 17.0, max 28.0)	
Educational year; n (%)	
1	24 (11.7)
2	39 (19.0)
3	47 (23.0)
4	40 (19.5)
5	23 (11.2)
6	32 (15.6)
GPA; mean [SD] (min 2.3, max 4.0)	3.4 [0.36]
Total BCSQ-12-SS scores; mean [SD] (min 12, max 83)	40.0 [12.8]

BCSQ-12-SS=Burnout Clinical Subtype Questionnaire-12 Student Survey; GPA=grade point average; SD=standard deviation

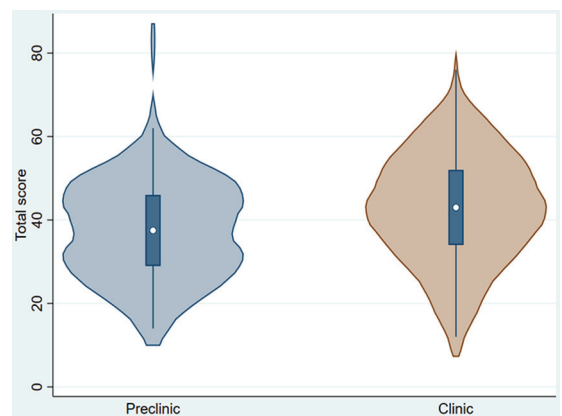


Figure 1. Violin plot of total BCSQ-12-SS scores comparing pre-clinical and clinical students.

was lower than that of the lack of development (0.86) and neglect constructs (0.74).

Reliability

Table 2 presents the analysis of internal consistency for the Thai BCSQ-12-SS. All dimensions and the total score demonstrated acceptable to good reliability, with Cronbach's alpha values ranging from 0.7 to 0.88. Test-retest reliability was excellent, with ICC values ranging from 0.94 to 0.96 across all dimensions and the total score.

Regarding associations between Thai BCSQ-12-SS total scores and participant characteristics (Table 3), only the year of study was significantly associated with higher burnout scores, which was consistent with the results of the known-group

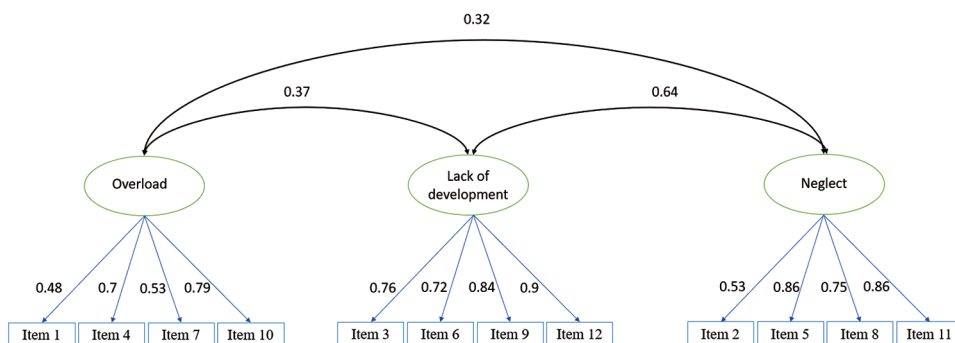


Figure 2. First degree confirmatory factor analysis. Numbers on the arrows represent standardized factor loadings of each item on its respective latent construct. Numbers on the curved double-headed arrows indicate correlations between latent constructs.

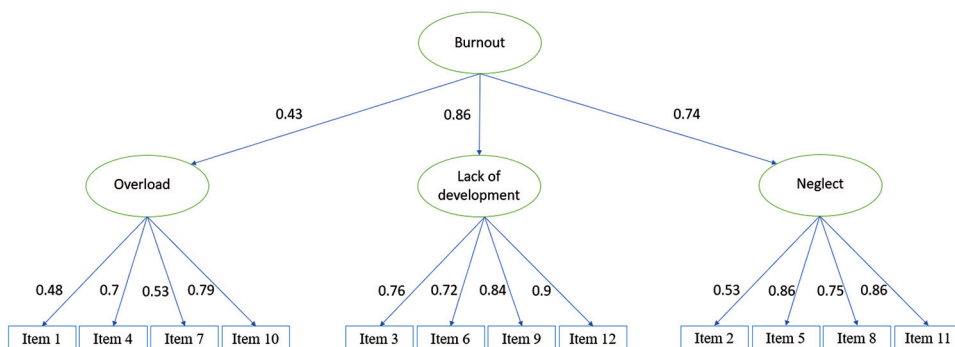


Figure 3. Second degree confirmatory factor analysis. Numbers on the arrows represent standardized factor loadings of each item on its respective latent construct.

Table 2. Internal consistency and test-retest reliability of the Thai BCSQ-12-SS

Dimension	Cronbach's alpha	ICC	p-value (ICC)
Overload (1, 4, 7, 10)	0.7	0.96	<0.001*
Lack of development (3, 6, 9, 12)	0.88	0.94	<0.001*
Neglect (2, 5, 8, 11)	0.84	0.95	<0.001*
Total score	0.86	0.96	<0.001*

ICC=intraclass correlations coefficient

* p<0.05

Table 3. Association between participant characteristics and total burnout scores using multivariable linear regression analysis

Variable	Coefficient (95% CI)	p-value
Sex: male	-2.5 (-6.1 to 1.1)	0.166
Age (years)	-0.7 (-1.9 to 0.5)	0.274
Study year: clinic	6.5 (1.8 to 11.1)	0.006*
GPA	-2.3 (-7.2 to 2.6)	0.354

CI=confidence interval; GPA=grade point average

* p<0.05

validity analysis. No significant associations were observed with sex, age, or GPA.

DISCUSSION

The present study aimed to translate the BCSQ-12-SS into Thai and to examine its psychometric properties, including known-group validity, factor validity, internal consistency, and test-retest reliability. To the authors' knowledge, this is the first study to validate and assess the reliability of the Thai version of the BCSQ-12-SS.

These findings indicated that students in the

clinical years reported significantly higher burnout levels than those in the pre-clinical years, whereas sex and GPA were not associated with burnout. These results support the hypothesis regarding known-group validity and are consistent with previous studies demonstrating that clinical students often experience heavier workloads, longer working hours, and overnight on-call duties, which contribute to increased burnout^(5,12).

Regarding factor validity, most items loaded strongly on their intended dimensions, indicating clear item-to-factor relationships. Three items showed

moderate but acceptable loadings, all of which were statistically significant.

Model fit indices showed mixed results. The CFI (0.91) exceeded the conventional cutoff of 0.90, suggesting an overall adequate fit, whereas the RMSEA (0.10) was slightly above the recommended threshold of 0.08⁽¹³⁾. Taken together, these results suggest that the structural validity of the Thai BCSQ-12-SS is acceptable but not optimal. Inter-factor correlations were moderate (0.32 to 0.64), supporting the notion that the three domains of burnout are related but represent distinct constructs, consistent with the theoretical model. The second-order CFA further demonstrated stronger loadings for the lack of development and neglect factors, while the overload factor showed weaker loadings. This suggests that the suboptimal model fit may be primarily attributable to the overload construct. This may reflect the unique nature of overload, which often involves excessive, self-imposed dedication to work resembling workaholism, whereas lack of development reflects disengagement and unfulfillment, and neglect represents withdrawal or abandonment of effort when faced with perceived futility⁽⁷⁾. Therefore, future studies examining factor validity in different populations are needed to confirm these findings. Revising or removing items with low to moderate factor loadings may further improve model fitness.

In terms of reliability, the Thai BCSQ-12-SS demonstrated good internal consistency for the total score and all subscales, with Cronbach's alpha values exceeding 0.7, consistent with the original validation study⁽¹⁰⁾. Notably, while the original BCSQ-12 and BCSQ-12-SS did not assess test-retest reliability, the present study demonstrated excellent stability over time, with ICC values indicating strong reproducibility.

The present study has limitations. First, convergent validity was not assessed, which limits the ability to compare the Thai BCSQ-12-SS with other established burnout measures. Future studies should compare the Thai BCSQ-12-SS with classical instruments such as the MBI. Second, the sample consisted exclusively of medical students from a single university, which may restrict the generalizability of the findings to students from other faculties or institutions. Third, data were collected between 2020 and 2021, during the early phase of the COVID-19 pandemic. Previous studies have reported elevated levels of burnout among medical students and healthcare workers during this period compared with pre-pandemic levels, which may have

influenced the observed burnout scores^(14,15). Finally, responsiveness, or the ability to detect changes over time, was not examined in either the original study or the present study. Future research should therefore assess the responsiveness of the BCSQ-12-SS to determine its utility for longitudinal monitoring or follow-up of burnout symptoms.

Regarding clinical implications, the results of the present study suggest that the Thai version of the BCSQ-12-SS may serve as an alternative or complementary instrument to the Maslach Burnout Inventory-Student Survey (MBI-SS) for assessing burnout among medical students. Unlike the MBI-SS, which conceptualizes burnout as a uniform construct, the BCSQ-12-SS distinguishes three burnout subtypes: frenetic (overload), under-challenged (lack of development), and worn-out (neglect), and conceptualizes burnout as a progressive process of commitment erosion^(8,10). The validated Thai BCSQ-12-SS allows identification of distinct burnout profiles, facilitating more targeted interventions, while its brevity and ease of administration support its use in routine screening and monitoring in educational and clinical settings.

CONCLUSION

The Thai version of the BCSQ-12-SS demonstrated acceptable validity and excellent reliability, supporting its use as a practical tool for assessing burnout among Thai students.

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC?

Burnout is a common phenomenon among students, particularly medical students. The most widely used instrument for assessing burnout is the MBI. However, the BCSQ was developed to provide a broader conceptualization of burnout, distinct from the Maslach model. It identifies three clinical subtypes of burnout that differ according to levels of dedication to work.

WHAT DOES THIS STUDY ADD?

The Thai version of the BCSQ-12-SS had not previously been developed or validated. This study demonstrated that the Thai BCSQ-12-SS has acceptable validity and excellent reliability. It may serve as a useful alternative measure of burnout among students in Thailand.

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AUTHORS' CONTRIBUTIONS

TL contributed to the conceptualization of the study and drafting of the manuscript. CS contributed to the conceptualization, study design, and data collection. TC contributed to the conceptualization, study design, formal analysis, manuscript writing, and supervision. All authors read and approved the final manuscript.

DATA AVAILABILITY STATEMENT

There are restrictions on publicly sharing the dataset due to the confidential nature of the data, as approved by the Human Research Ethics Committee, Faculty of Medicine, Thammasat University. However, the dataset may be made available upon reasonable request to the corresponding author and will be provided to researchers affiliated with an accredited institution.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study protocol was approved by the Ethics Committee of Thammasat University (MTU-EC-OO-0-034/63). All participants received information about the study, and written informed consent was waived due to the use of an online survey.

CLINICAL TRIAL REGISTRATION

This study was not registered as a clinical trial, as it was an observational survey study.

USE OF ARTIFICIAL INTELLIGENCE

The authors acknowledge the use of ChatGPT (OpenAI, GPT-5.2) for assistance with language editing and manuscript organization. The authors take full responsibility for the content of the manuscript.

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This study received no funding support.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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