

Psychometric Properties of Beliefs about Pain Control Questionnaire in People with Cancer – Thai Version

Srisuda Ngamkham, Boontuan Wattanakul,* Alongkorn Pekalee, Nitima Suparee

Abstract: Peoples' belief about pain control is the key factor of effective pain management. Understanding such beliefs about pain control will help healthcare providers deliver appropriate pain management. The Beliefs about Pain Control Questionnaire, developed by Suzanne Skevington, is a popular tool for assessing pain belief. This questionnaire comprises three subscales of an individual's belief in pain control: internal factors, power of doctors, and by chance events. The purpose of this study was to translate and examine the psychometric properties of this questionnaire. Convenience sampling was used to recruit 155 Thais with cancer to test the questionnaire. The Cronbach's alpha was computed for reliability. The confirmatory factor analysis was examined for the factor structure of the questionnaire.

The construct validity of the Thai Beliefs about Pain Control Questionnaire was confirmed with remaining the original 13 items with the three-subscale model of internal factors, power of doctors, and pain controlled by chance events. The overall internal consistency reliability ($\alpha = 0.74$) and each domain had a reliability coefficient of internal factors ($\alpha = 0.58$), power of doctors ($\alpha = 0.75$), and by chance events ($\alpha = 0.32$). In conclusion, the Thai questionnaire version is short and convenient for a self-report questionnaire. Nurses could use the questionnaire to assess people with cancer in clinical settings and design interventions to improve self-efficacy and pain management empowerment. However, further refinements, especially in internal and chance events, are still needed to confirm whether the questionnaire equates with Thai beliefs.

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Introduction

Cancer is a major global health problem. The Global Cancer Observatory 2020 indicated that there were 19.3 million new cases of cancer and almost 10 million deaths from cancer in 2020.¹ People living with cancer have both physical and

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psychological suffering that significantly affects their quality of life.²⁻⁵ Pain is one of the most common symptoms in people with cancer. Severe and chronic pain increases the risk of anxiety and depression, worsening cancer pain and making it harder to control. In addition, people with cancer pain living with depression tend to have a low sense of control appraisal of cancer and negative personal coping skills.⁶

People with cancer pain from different cultures often have different beliefs about cancer pain. Many Thai Buddhists believe that cancer results from their having committed sins in this or past lives;⁷ thus, some do not commonly engage in pain management practices because they believe that individuals can do very little to control their pain.⁷ Chinese with cancer may have negative beliefs about cancer and low pain control.⁸ Polish people also believed that managing pain is in the power of physicians.⁹ Therefore, it is important to assess the individual's belief about pain control to know how powerfully the patients work to control their pain. Beliefs about pain control influence an individual's pain perception and may be a valuable way to improve their self-efficacy on pain management.

People's belief about pain plays a vital role in treatment. Pain perception is associated with physiological and psychological factors involved in people's reaction to pain depending upon the intensity of their suffering. In particular, beliefs as psychological factors play a significant role in pain control in people with cancer.¹⁰ Understanding their beliefs about pain control will help the healthcare providers deliver the appropriate treatment program for pain management. Skevington¹¹ utilized the health concept of locus of control (HLC), which distinguished people's beliefs and examined pain control beliefs. Three concepts of beliefs are identified and assessed, including the belief in internal or personal control of pain, the belief in doctors' power, and the beliefs in chance happenings. In addition, Skevington's revised version, the Beliefs about Pain Control Questionnaire (BPCQ), has been designed to examine beliefs about controlling pain.

The BPCQ is the self-administered multidimensional construct questionnaire that evaluates the HLC in pain. HLC is defined as the person's effectiveness when applying coping strategies while facing chronic illness.¹² HLC consists of two types: internal and external. Internal HLC is the belief in the responsibility of one's health to oneself while external HLC is belief in the responsibility of one's health to the others such as physicians, nurses, and other healthcare providers or the belief about the effect of chance on one's health.¹²

People's perception of cancer pain is related to their belief of pain control. Evidence suggests that self-rated health has a positive association with an internal locus of control and a negative association with the locus of control by powerful others (physicians) and chance.¹³ Before this study, there was no instrument to assess the patients' beliefs about pain control in Thailand. Thus, we explored whether the translated Thai BPCQ has acceptable validity and reliability when used with Thai people with cancer experiencing pain. Regarding pain management in people with cancer, it is essential to assess this aspect to improve the quality of pain control.

Review of Literature

Pain perception depends on the perception of individual experiences of pain. One of the factors influencing pain perceptions is the locus of control related to the general beliefs about pain and the ability of the individual actions.¹⁰ Therefore, the locus of control is a crucial determinant of individual pain management. In recent years, many different instruments to assess pain belief were developed, but the BPCQ was the only scale measuring beliefs about controlling pain.

The development of the BPCQ

People's belief about pain is the key factor of an individual's healthcare behaviors and treatment outcomes.¹⁴ Several tools were developed for assessing the people's beliefs such as the Survey of Pain Attitude (SOPA),¹⁵ the Pain Belief Questionnaire (PBQ),¹⁶

and the Beliefs about Pain Control Questionnaire (BPCQ).¹⁷ SOPA and PBQ have some disadvantages.¹⁸ Both SOPA and PBQ have some limitations in that SOPA comprises many items (57 items) while the PBQ is not focused on patients' pain control. The BPCQ is one of the popular tools developed by Suzanne Skevington, Professor of Health Psychology,¹⁷ for assessing people's hurt. This questionnaire consists of three types of people's beliefs, including 1) beliefs in the internal or personal control of pain (IS, five items), which ask about beliefs like: 'If I take good care of myself I can usually avoid pain,' 2) beliefs in the power of doctors to control pain (PD, four items), such as 'Whether or not I am in pain depends on what the doctor does for me,' and 3) beliefs that pain is controlled by chance events (CH, four items) like: 'Being pain-free is largely a matter of luck.' Each item is assessed by six rating scales (Completely disagree to Completely agree).^{9,17}

Construct validity of original BPCQ

Skevington¹⁷ in the UK found an adequate validity and reliability of the BPCQ for assessing people's beliefs about pain control. The Pearson Product Moment correlations between the BPCQ and other scales (i.e., Health Locus of Control scales and McGill Pain Questionnaire) were significant. The Cronbach's alpha showed the proper internal consistency for overall (0.68) and also revealed an adequate value for each subscale (IS = 0.73, PD = 0.82, and CH = 0.56). In summary, the BPCQ appears to have several advantages. A study in Poland⁹ revealed that the three subscales could measure people's pain control and beliefs about pain control in those who do not currently have pain or are outpatients.¹⁹

The BPCQ utility is suited for assessing beliefs about pain in people with cancer. For example, the evidence shows that the people with breast cancer and prostate cancer²⁰ in Poland believed that doctors control pain but not those with colorectal cancer who believed in internal factors.²¹ In addition, other factors, including education and professional status, were associated

with doctors' power to control pain. People with breast cancer who were highly educated and had a high professional status had lower beliefs in the power of doctors.²²

Study Aim

This study aimed to translate and examine the psychometric properties of the Thai version of the Belief of Pain Control Questionnaire (BPCQ) among people with cancer attending an outpatient clinic in Thailand.

Methods

Study Design: This study used a cross-sectional descriptive design to collect data in a cancer hospital in Eastern Thailand from January 4 to March 31, 2018. This study followed the STROBE Statement—Checklist of items to report this cross-sectional study with two phases:

Phase 1, Translation: The translation process of the English BPCQ followed guidelines for translation and cross-cultural adaptation of the instrument.^{23,24} The researchers obtained permission from the authors of the English BPCQ before translating. The translation process consisted of two steps:

Step 1 Forward translation and reconciliation. The English BPCQ was translated into the Thai language by the two researchers who were bilingual native Thai speakers. The translations were compared and reconciled through discussion. The researchers found errors or divergent interpretations of ambiguous items Nos. 4, 5, 7, 8, and 9. The researchers discussed each item to seek agreement that the translated items had the same meaning as the original English language of the BPCQ. After discussion, all item discrepancies were reconciled to select the most appropriate phrasing equivalency and cross-cultural adaptation. The translated items did not disagree with the translations.

Step 2 Back-translation with monolingual test and harmonization. The Thai BPCQ was blindly

back-translated by a linguistic specialist from the language institute of a university. The back-translation of Thai BPCQ was compared against the original English BPCQ for semantic and conceptual equivalence. Each item of the original BPCQ with all the translations and shared translation solutions was shared with an expert panel. Five Thai native speakers were asked to assess the level of comprehensibility and cognitive equivalence. Then, outcomes of cognitive interviews were reviewed and modified to ensure cultural equivalence of the translated instrument. Proofreading the translated instrument was done to detect potential errors, including misspelling or grammatical mistakes.

Only one item (Item 5) was found to have a potentially different meaning, “*No matter what I do, if it causes pain, I will have pain.*” The back-translation by the linguistic specialist was “*I must accept any pain resulting from anything that I have done even though I know the consequence.*” The linguistic specialist refined the item to “*I accept any pain as a result of my action even if I prior know the consequence.*” Lastly, two native English speakers reviewed the back-translated BPCQ scale for comprehensibility and compared it to the original English version, and there was no recommendation for change.

Phase 2: Validation of the Thai BPCQ. Content validity was assessed by five experts on pain management who were fluent in English-Thai languages (one anesthesia physician, one surgical nurse, and three nurse educators). They were requested to consider the Thai BPCQ based on Lynn’s methods of judgment and quantification processes.²⁵ The content validity index for the scale and the content validity for items were examined. The Thai BPCQ was blindly back-translated by linguistics. The item-level content validity index (I-CVI) range was 0.67 to 1.00, and the average scale-level CVI (S-CVI) was 0.83. Construct validity was examined using the CFA. In addition, internal consistency reliability was assessed for the total scale and items by computing Cronbach’s alpha coefficients.

Sample and Setting: A convenience sample of 155 people with cancer pain was purposively recruited from the one cancer hospital in the east of Thailand. For sample size, we used Nunnally and Bernstein’s recommendation of the ratio of the number of people (N) to the number of three measured domains (p) to be at least 10.^{26,27} Thus, the number of participants should be at least 130, but we recruited 150 participants. The inclusion criteria were: diagnosed with any cancer types or stages, aged 18–60 years, having the worst pain score as equal and more than 4, and able to read and write the Thai language. People with cancer who had cognitive impairment or psychiatric illness were excluded.

Measures: There were two measures: General information questions and the Beliefs about Pain Control Questionnaire (BPCQ).

General information questions included age, gender, education, religion, occupation, history of cancer in the family, and meditation experience.

*The Beliefs about Pain Control Questionnaire (BPCQ)*¹⁷ Thai version is a self-administered questionnaire, comprised of 13 items with three subscales assessing the strength of an individual’s locus of pain control: internal factors (IS), power of doctor (PD), and by-chance events (CH). There are five IS items, four PD items, and four CH items. Item responses range from 1 (strongly disagree) to 6 (strongly agree). The sum score is calculated for each subscale of pain control. The measure had acceptable internal consistency reliability based on Cronbach’s alpha coefficients in the original English version.^{17,28,29} In another study, the Cronbach’s alpha of the overall scale was 0.81,⁹ and for subscales, the influence of doctors is 0.86, the internal localization of pain control is 0.82, and the influence of by-chance events is 0.58.⁹

Ethical Considerations: This study was approved by the Institutional Review Board of Chonburi Cancer Hospital (No. 26/2017) in Thailand. All participants understood the study protocol and signed the informed

consent before recruitment. Participants had a right to refuse or withdraw from participation in this study at any time, and deciding not to participate would not affect their healthcare services from the hospital. We kept confidentiality and anonymity secure by assigning identification numbers for all documentation and participants and keeping data safe.

Procedures: After IRB approval, a research assistant (RA) informed the study's objective and protocol to the participants who met the criteria. When the participants understood, the RA gave the participants a questionnaire to complete, which took around 15 minutes. The participants returned the questionnaires to the RA, who checked their completeness.

Data Analysis: All data were analyzed using the SPSS software (version 24.0; SPSS Inc., Chicago, IL, USA). We excluded from analysis three questionnaires that had missing data. The demographic characteristics and the total and subscale scores of the Thai BPCQ were described using descriptive statistics, including mean, standard deviation, and frequency distribution. The Kaiser-Meyer-Olkin (KMO) test was used for sampling adequacy. The Cronbach's alpha was used to test the internal consistency reliability. Construct validity requires good internal reliability with a Cronbach's alpha coefficient > 0.70.³⁰ Confirmatory factor analysis (CFA) was employed to test the construct validity of the Thai BPCQ using the STATA software version 12.0. The CFA is a method to validate the translated measure in different cultures.³¹ It was used to verify the three-factor structure of the data set and the development of this scale generally. Several fit indices were selected to examine which CFA model best represented the data: the root mean square error of approximation (RMSEA), comparative fit index (CFI), chi-square, and change in chi-square between the models.³¹ RMSEA is a measure of the average residual variance and covariance; RMSEA values of 0.08 or less reflect good models. The CFI values > 0.90 are considered good fitting models. Comparing models, a better fitting model has a lower chi-square value with equal degrees of freedom (df). Underlying

constructs of the BPCQ, CFA was performed to assess if the model fitted the data.

Results

Participants' Characteristics

A total of 155 participants with cancer were recruited for the study. Participants had an average age of 47 years (range 21–60). The majority were male (51.9%), Buddhists (99.7%), unemployed (15.2%), farmers (12.0%), low income (69.5%) and had <14 years in school (90.4%). Some participants (35.4%) had cancer diagnosed in their families. Overall, 55.8% of participants had used meditation, and all were receiving treatment for their cancer.

Reliability of Thai BPCQ

The mean score of 13 items of the Thai BPCQ was 4.47 ± 0.37 , while the mean sum score of all items of Thai BPCQ was 58.07, with a standard deviation of 8.53 (Table 1), and a range of possible sum scores of 13–78. Our analysis indicated a mean inter-item correlation of 0.37 ± 0.07 and a mean item-total correlation of 0.17 ± 0.02 (Table 2). With 13 items of Thai BPCQ, the overall scale's alpha coefficient had acceptable internal consistency reliability of 0.74 (Table 1). However, the reliability of internal factors ($\alpha = 0.581$) and by chance events ($\alpha = 0.318$) were lower than the reliability of power of a doctor ($\alpha = 0.751$). The inter-item correlations were all positive, ranging from 0.173 to 0.481, indicating that all items conceptually fit together. The item-total correlations ranged from 0.304–0.546 except for Items 1, 11, and 13, which had low correlation to total scores of 0.168, 0.204, and 0.181, respectively (Table 2). The item-total correlations were acceptable as they had good correlations with other items except for a few items having either high or low correlation values suggesting they were not redundant or had high correlation. Overall, 50% of all items had values of 0.30–0.70, which is considered acceptable.³²⁻³⁴ Table 2 reveals that Item 12 was essential as the reliability coefficient could fall to 0.69 if it were deleted.

Table 1. Cronbach's alpha coefficients of the Thai BPCQ (N = 155)

Subscales	Number of Items	Mean \pm SD	Average Inter-Item Covariance	Cronbach's Alpha Coefficients
BPCQ	13			0.74
IS	5	21.73 \pm 4.07	0.382	0.581
PD	4	17.16 \pm 4.42	0.917	0.751
CH	4	19.03 \pm 2.84	0.157	0.318

Abbreviations: IS = internal factors, PD = power of doctor, and CH = by-chance events.

Table 2. Mean, standard deviation, item-subscale and item-total correlation, and internal consistency in case of deletion (N = 155)

Items of BPCQ	Mean \pm SD	Inter-Item Correlation	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
If I take good care of myself, I can usually avoid pain. ถ้าฉันดูแลตนเองเป็นอย่างดี ฉันสามารถหลีกเลี่ยงความปวด	4.44 \pm 1.17	.222	.181	.738
Whether or not I am in pain in the future depends on the skill of the doctors. ในอนาคตฉันมีความปวดหรือไม่ขึ้นอยู่กับทักษะ ของแพทย์	4.37 \pm 1.37	.362	.506	.702
Whenever I am in pain, it is usually because of something I have done or not done. เมื่อไรที่ฉันมีความปวดมักจะเกิดจากสิ่งที่ฉันทำหรือยังไม่ได้ทำ	4.11 \pm 1.28	.203	.345	.722
Being pain-free is largely a matter of luck. การไม่ปวดเป็นความโชคดีมาก ๆ	5.61 \pm 0.89	.323	.304	.727
No matter what I do, if I am going to be in pain I will be in pain. ไม่ว่าฉันจะทำอะไร ถ้าทำแล้ว ฉันมีความปวด ฉันก็จะต้องปวด	4.48 \pm 1.39	.218	.346	.722
Whether or not I am in pain depends on what the doctors do for me. ฉันจะมีความปวดหรือไม่ขึ้นอยู่กับแพทย์ปฏิบัติเพื่อฉัน	3.79 \pm 1.61	.416	.451	.708
I cannot get any help for my pain unless I go to seek medical help. ฉันไม่สามารถได้รับการช่วยเหลือใดๆ สำหรับความปวด นอกจากรับประทานยา	4.62 \pm 1.35	.327	.466	.707
When I am in pain, I know that it is because I have not been taking proper exercise or eating the right food. เมื่อฉันมีความปวด ฉันรู้ว่าฉันออกกำลังกายไม่เหมาะสม หรือรับประทานอาหารไม่ถูกต้อง	4.21 \pm 1.43	.214	.304	.727

Table 2. Mean, standard deviation, item–subscale and item–total correlation, and internal consistency in case of deletion (N = 155) (Cont.)

Items of BPCQ	Mean ± SD	Inter-Item Correlation	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Whether or not people are in pain is governed by accidental happenings. คนทุกคนมีความปวดโดยบังเอิญ	3.43 ± 1.52	.207	.323	.725
People's pain results from their own carelessness. ความปวดของทุกคนเป็นผลมาจากการขาดการดูแลตนเอง	4.26 ± 1.57	.331	.443	.709
I am directly responsible for my pain. ฉันรับผิดชอบโดยตรงต่อความปวด	4.75 ± 1.14	.173	.208	.735
Relief from pain is chiefly controlled by the doctors. การบรรเทาความปวดเป็นหน้าที่หลักของแพทย์	4.40 ± 1.49	.381	.546	.695
People who are never in pain are just plain lucky. คนที่ไม่เคยมีความปวดเลย เป็นคนโชคดี	5.56 ± 0.99	.275	.168	.738

These results showed that the discrimination of the items is acceptable, with the 13-item Thai BPCQ version having a relatively adequate inter-item and item–total correlation. A rather large standard deviation of the items was associated with Item 6.

Construct Validity

The CFA of 155 participants followed a three-factor model consistent with its original English BPCQ. The Kaiser–Meyer–Olkin (KMO) Test for sampling adequacy for each variable in the model was 0.72. The sample size for factor analysis was met. The CFA was performed to discover the Thai BPCQ items using correlations between variables based on a predetermined structure. The goodness of fit indices evaluated the suitability of data. The χ^2 of the initial model was 118.80, degrees of freedom were 62, and p values < 0.05 based on the sample size of 155. The CFI of the model was 0.821, while the TLI was 0.774. The RMSEA was 0.077, a standardized root mean square residual (SRMR) of 0.090 was observed, and all fit indices of the initial model showed that the model did not fit well.³⁵ We noted that some items had a low factor loading.

By the low factor loading in the initial model, items and covariances might make their contribution

to the model fit somewhat questionable. Then, we conducted a further CFA where covariances were linked if modification indices were >4.0,^{30,36} for the same analysis of the population of 155. We improved the model by freeing covariances among b1 and b4, b5; b3 and b10, b9; b2 and b9; b12 and b9; b4 and b13; b5 and b13; and b9 and b13. The χ^2 of the different models was 52.815, the degrees of freedom were 53, and p -values of 0.481, CFI of 1.000, TLI of 1.001, RMSEA of 0.000, and SRMR of 0.050. Thus, the model was improved in terms of the model χ^2 and the model fit indices, and showed a good fit model based on the cut-off values for CFI/TLI, RMSEA, and SRMR as recommended by Hu et al.³⁵ The modified model was displayed, along with latent variable correlations, standardized parameter estimates and squared multiple correlations.

After fitting the alternative model, we noted that modification indices were greater in magnitude than 4.0 in some covariances. We improved the fitting by freeing parameters in the model by freeing covariances among b3 and b10; and b2 and b7 (Figure 1). The χ^2 of the competing model was 41.81, degrees of freedom were 51, and p -values of 0.82, CFI of 1.044, TLI

of 1.000, RMSEA of 0.000, and SRMR of 0.047. Thus, the competing model was improved in terms of the model χ^2 and the model fit indices showed a good fit model based on the cut-off values for CFI/TLI, RMSEA and SRMR as recommended by Hu et al.³⁵

The modified model as displayed along with latent variable correlations, standardized parameter estimates and squared multiple correlations. In the best fit model, standardized factor loading was > 0.3 for all of the three-factor model (Figure 1).

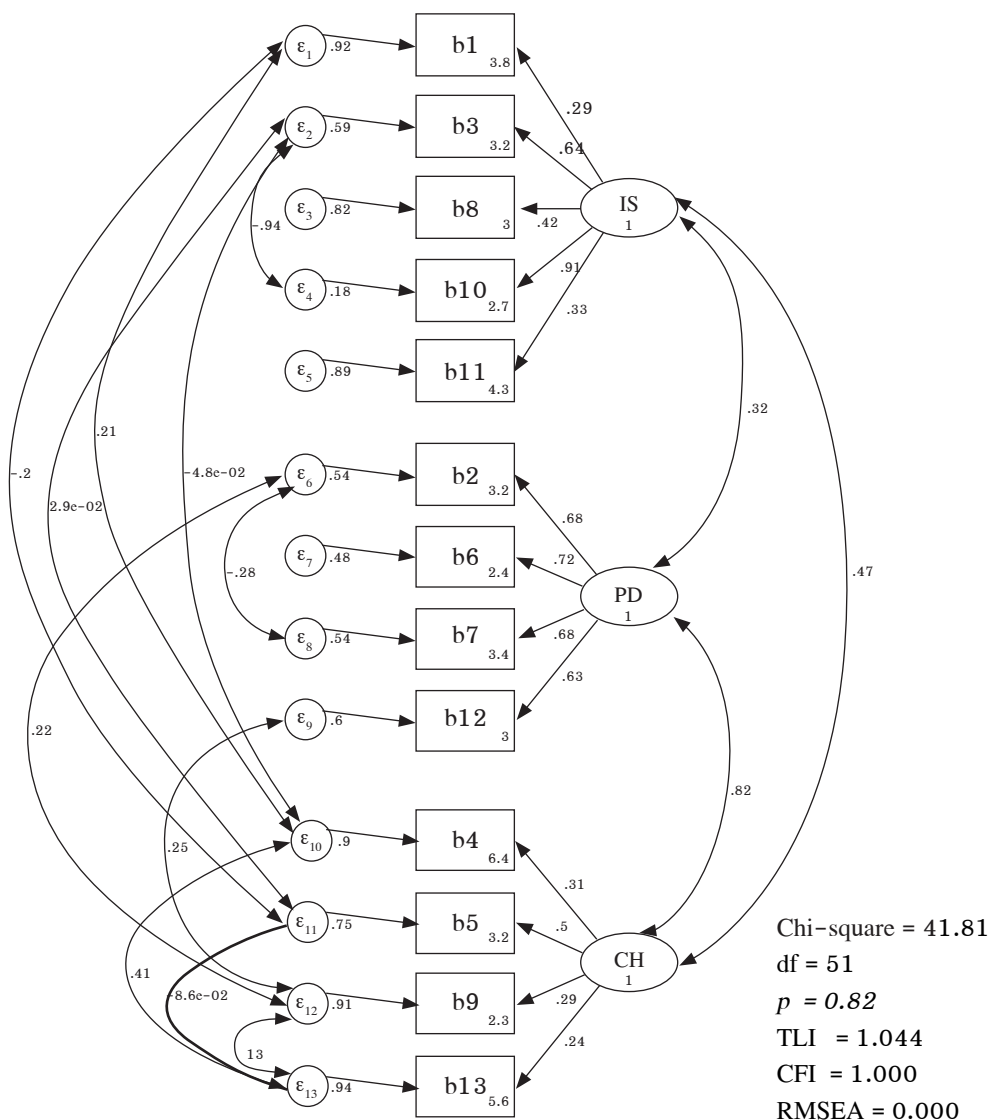


Figure 1: CFA competing model of the BPCQ with modification latent variable correlations, standardized parameter estimates and squared multiple correlations.

Abbreviation: IS = internal factors, PD = power of doctor, and CH = by chance events, b1-13 = item number of the BPCQ. df = degree of freedom, $p = p$ -value, CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA=Root Mean Square Error of Approximation

In model comparisons (Table 3), Akaike Information Criterion (AIC) values were focused on comparing models. Table 3 shows other fit indexes for the three models, with the competing model with

a smaller value of AIC providing a better explanation of the Thai BPCQ. This suggests that the Thai BPCQ remaining three constructs are similar to the original English BPCQ.

Table 3 Comparison of fit indexes for alternative models of the structure of BPCQ Thai version

Model	χ^2	df	p	AIC	BIC	CFI	TLI	RMSEA	SRMR
Initial model	118.68	62	<0.05	6584.46	6712.29	0.821	0.774	0.077	0.090
Alternative model	52.82	53	0.48	6536.60	6691.81	1.000	1.001	0.050	0.935
Competing model	41.81	51	0.82	6529.59	6690.89	1.000	1.044	0.000	0.047

Abbreviation: χ^2 = chi-square, df = degree of freedom, p = p-value, AIC = Akaike Information Criterion, BIC = Bayes Information Criterion, CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual

Discussion

Our study tested the psychometric properties of the Thai version of the Belief of Pain Control Questionnaire (BPCQ) among people with cancer in Thailand. The translation and cultural adaptation of the BPCQ instrument was performed by comparing with other translation processes. The Thai BPCQ instrument is easy to understand based on the present study. However, only one item (Item No. 5 – “No matter what I do, if I am going to be in pain, I will be in pain”) might have a problem with various meanings of the sentence. We asked the same linguist to recheck the back-translation on this item, and he revised it to the final version.

The English BPCQ was translated into Thai followed Sperber’s method, which is suitable for the cross-culturally validated research and could assist in maintaining the semantic equivalence between the original BPCQ and the Thai BPCQ. Previous studies have revealed the same report using this technique.^{37,38} Using the same process, we found that the Thai BPCQ is a valid tool. Its 13 items could reliably represent the subscales of belief about pain control in Thai people with cancer. The Thai BPCQ had an acceptable standard internal homogeneity among items as the Cronbach’s alpha coefficients were >0.70.³⁰ For each

subscale, only the PD had acceptable standard internal homogeneity among items in the subscales. The CH and IS subscales’ internal reliability presented low internal consistency, resulting from several items. The low alpha coefficients suggest a low degree of inter-correlation among four or five measured items in a subscale. Our possible explanation is to focus on interaction; each item may independently interact with items on different subscales rather than be measured into a single feature. Consequently, all items influenced internal consistency for the total BPCQ scale and increased the total Cronbach’s alpha coefficient.

Our result had slightly lower reliability than the original version and other previous studies where the Cronbach’s alpha coefficients of the total scale ranged from 0.68 to 0.81. For each subscale, the results of our study was also a little bit lower than other studies with the Cronbach’s alpha coefficients ranging 0.73–0.82, 0.82–0.86, and 0.55–0.66 for internal factors, power of doctors, and by-chance events respectively^{9,17,39} (See Table 2). The PD has higher reliability, reflecting the belief in the power of doctors in pain control, which is true in people with cancer. Since they need medications and other treatments to control the spread of cancer, the cause of pain, Thai people are strong believers in the influence of physicians for pain control. It was noted that the

reliability of the by-chance events subscale was lower than other subscales. Participants' religion or spiritual beliefs might affect their beliefs about pain control by internal factors and by-chance events. Most of our participants were Buddhists who strongly believed their cancer and pain resulted from sins in this or past lives,⁷ (as noted in **Table 2**, Item 9 had a low mean score). In many western religions (i.e., Catholic), there is the belief that whether people are admitted into heaven or not is based solely upon the full acceptance of their beliefs set forth by God and their religion.⁴⁰ If Catholics are given a diagnosis of terminal cancer, they can begin end-of-life preparations. This suggests that people with cancer may not relieve their pain due to by-chance events.

When considering each item, the 12th item, "Relief from pain is chiefly controlled by the doctors," showed a Cronbach's alpha coefficient if the item was deleted a little bit lower than 0.70. This may arise from Thai culture's belief in powerful of doctors in controlling pain. The relatively large standard deviation of the items associated with Item 6 was supposed from the fact that those enrolled in the study had pain scores >4. If they believed that physicians controlled their pain, the result might vary. All participants believed that the physician is the crucial person who controls pain. From another point of view, we noted that the mean score on IS subscale (5 items) was greater than the score of the PD subscale (four items) and the score of IS on the original BPCQ. This indicates that participants believed they were directly responsible for controlling their pain and managing self-care to avoid pain. Thais with cancer believed in their self-control ability for pain, and healthcare providers can support such patients to perform effective pain control.

The CFA illustrated acceptable goodness of fit indices, suggesting that the model represented the current data. The model supported the three domains of the Thai BPCQ based on the original version of BPCQ, internal factors, power of doctor, and by-chance events.¹⁷ All items showed significantly moderate to high factor

loadings, indicating the moderate or strong correlation between the item (statement) and the factor in the Thai BPCQ. The result suggests that the Thai BPCQ reveals a valid construct for assessing Thai people with cancer's beliefs about pain control. However, this result could not compare with other contexts because there is a lack of previous studies exploring the correlation between the statement and the domain of the BPCQ. Thus, even though the CFA illustrated the model fit was acceptable, the BPCQ tool was used to measure the belief of pain that may be affected by the culture and other factors, and all three models fitted. Therefore, all items in Thai BPCQ can measure participants' beliefs about pain control.

The mean scores of the three subscales in Thai BPCQ were consistent with the original English BPCQ. The highest mean score was the "by-chance event" subscale, while the lowest mean score was the "internal factors" subscale.¹⁷ The result did not provide evidence of a similar belief about pain control among people with cancer who are from different cultures.

Furthermore, the mean score of Thai people with cancer was higher than Skevington's study.¹⁷ It may be because most of the participants in this study had a low level of education. Czerw and colleagues' study⁹ suggested that people with cancer who had a lower educational level were more likely to rate high scores in all three domains of BPCQ than those with a higher education level. Thus, the educational level should be investigated for comparing across cultures.

Limitations

This study used convenience sampling from only one province in Thailand. Thus generalization of the result may be limited. Also, only CFA was used to examine the construct validity. The convergent and discriminant validity should be investigated in the future study of the Thai BPCQ. The total BPCQ items of the Thai version indicated adequate internal consistency reliability.

Conclusions and Implications for Nursing Practice

The present study confirms the construct validity and reliability of the Thai BPCQ. It demonstrates acceptable psychometric properties regarding its adequate construct validity and reliability of the total scale. Despite the low reliability of the two subscales (IS and CH), the reliability of the total scale was acceptable, thus it has the potential for further refinement and testing to improve the two dimensions before it can be used in future research and clinical practice by increasing the number of items of the two subscales. The CFA indicates that the translated Thai BPCQ remains to measure the three-factor constructs (IS, PD, CH) as the English BPCQ. Therefore, the Thai BPCQ is suitable for assessing belief about pain control in Thai people with cancer. In conclusion, the Thai BPCQ is short and convenient as a self-report instrument. Nurses could use this to assess beliefs about pain control in people with cancer in clinical settings and design the intervention for improving self-efficacy and empowerment in pain management.

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คุณสมบัติการวัดเชิงจิตวิทยาของแบบวัดความเชื่อการควบคุมความปวด ในผู้ป่วยมะเร็ง-ฉบับภาษาไทย

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บทคัดย่อ: ความเชื่อของผู้ป่วยเกี่ยวกับการควบคุมความปวดเป็นปัจจัยสำคัญต่อการจัดการความปวดอย่างมีประสิทธิภาพ ถ้าบุคลากรสุขภาพมีความเข้าใจเกี่ยวกับความเชื่อเกี่ยวกับการควบคุมความปวดจะช่วยให้จัดการความปวดได้อย่างเหมาะสม Suzanne Skevington เป็นผู้พัฒนาแบบวัดความเชื่อการควบคุมความปวดที่ได้รับความนิยมสำหรับการประเมินความเชื่อเกี่ยวกับความปวด ประกอบด้วย 3 องค์ประกอบหลักคือความเชื่อด้านการควบคุมในตนเอง ความเชื่อด้านอิทธิพลของแพทย์ และความเชื่อด้านเหตุการณ์ที่เกิดโดยบังเอิญ วัดคุณสมบัติของวิจัยครั้งนี้เพื่อแปลและตรวจสอบคุณสมบัติการวัดเชิงจิตวิทยาของแบบวัดความเชื่อการควบคุมความปวดฉบับภาษาไทย กลุ่มตัวอย่างคือผู้ป่วยมะเร็ง จำนวน 155 คน โดยการสุ่มอย่างง่าย เพื่อตอบแบบวัดความเชื่อการควบคุมความปวด วิเคราะห์ความเชื่อมั่นด้วยค่าสัมประสิทธิ์ครอนบาคแอลฟา และวิเคราะห์องค์ประกอบเชิงยืนยันเพื่อตรวจสอบโครงสร้างของแบบวัดความเชื่อการควบคุมความปวด

ผลการศึกษา พบว่า แบบวัดความเชื่อการควบคุมความปวดฉบับภาษาไทยมีความเที่ยงตรงเชิงโครงสร้างของ 13 ข้อคำถาม 3 องค์ประกอบหลักเหมือนต้นฉบับ คือความเชื่อด้านการควบคุมในตนเอง ความเชื่อด้านอิทธิพลของแพทย์ และความเชื่อด้านเหตุการณ์ที่เกิดโดยบังเอิญ ผลการหาค่าสัมประสิทธิ์ครอนบาคแอลฟา ของแบบวัดโดยรวม เท่ากับ 0.74 และ รายด้าน ได้แก่ ความเชื่อด้านการควบคุมในตนเอง เท่ากับ 0.58 ความเชื่อด้านอิทธิพลของแพทย์ เท่ากับ 0.75 และความเชื่อด้านเหตุการณ์ที่เกิดโดยบังเอิญ เท่ากับ 0.32 สรุปได้ว่า แบบวัดความเชื่อการควบคุมความปวดฉบับภาษาไทย เป็นแบบวัดที่กระชับและสะดวกต่อการนำไปใช้ในคลินิกเพื่อประเมินความเชื่อเกี่ยวกับการควบคุมความปวดในผู้ป่วยมะเร็งและออกแบบกิจกรรมพัฒนาการรับรู้ความสามารถในตนเองและเสริมสร้างพลังอำนาจในการจัดการความปวดอย่างไรก็ตาม ควรปรับปรุงข้อคำถามเกี่ยวกับความเชื่อด้านการควบคุมในตนเองและด้านเหตุการณ์ที่เกิดโดยบังเอิญ และศึกษาเพิ่มเติมเพื่อยืนยันความสอดคล้องกับความเชื่อของคนไทย

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