

VALIDATION OF THE PARENTING SENSE OF COMPETENCE SCALE IN FATHERS: THAI VERSION

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Abstract. The role of the parent is a significant family factor that can impact the child cognitively, emotionally, and socially. Strengthening parents' competence improves their performance as parents. This study is the development and validation of the Thai Parenting Sense of Competence scale (Thai PSOC scale) for assessing the parenting competence of Thai fathers. The Thai PSOC scale was revised from the PSOC scale developed by Gibaud-Wallston and Wandersman (1978). The scale consists of 17 items with 2 subscales: skill/knowledge (8 items) and valuing/comfort (9 items). The scale was tested with 195 Thai fathers-to-be/fathers. The results showed high internal consistency: 0.78 for the total scale and 0.73 and 0.80 for the skill/knowledge and valuing/comfort subscales, respectively. Confirmatory factor analysis (CFA) led to a revision of the Thai PSOC scale with better goodness of fit indices for the sample. In the revised scale with Item 17 was omitted, several goodness of fit indices improved significantly with a more acceptable, good fit ($\chi^2/df=1.63$; RMSEA=0.06; GFI=0.91; AGFI=0.88; NFI=0.80; TLI=0.90; CFI=0.91). With revision, the Thai PSOC scale is a potential instrument to measure parenting competence in Thai fathers.

Keywords: confirmatory factor analysis, fathers, parenting competence, PSOC scale, Thailand

INTRODUCTION

Parenthood is a transitional period in the family life cycle; one that requires good role models to function as a good parent. Performing the parenting role

is expected not only of mothers but of fathers as well (Matthey *et al*, 2000; Petch and Halford, 2008). The quality and style of fathers' care and interaction are important in the development of the child and the well-being of the family. Studies have shown that a positive relationship with a father can enhance cognitive abilities (Shannon *et al*, 2002; Boechler *et al*, 2003; Nettle, 2008), emotional responsiveness (Boyce *et al*, 2006; Harper, 2010), and social abilities (Green and Baker, 2011; Stevenson and Crnic, 2013) of a child as well as

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improve family relationships (Coley and Hernandez, 2006; Doherty *et al*, 2006; Hohmann-Marriott, 2009) and maternal health behaviors (Teitler, 2001; Martin *et al*, 2007; Alio *et al*, 2011). These studies support the role of fathers in parenting activities.

Parenting competence is a significant concept for understanding the determinants of parenting role behaviors (Maltby *et al*, 2003; Mendez-Baldwin and Busch-Rossnagel, 2003). It is defined as the ability to manage the demands of parenting (Ngai *et al*, 2007). Evidence demonstrates that a father's competence is both directly and indirectly related to positive father involvement behaviors in child rearing (Fagan and Barnett, 2003; Schoppe-Sullivan *et al*, 2008). Fathers who perceive themselves as competent in the role of a father are likely to be more effective in the care of their children (Gilmore and Cuskelly, 2008). Conversely, fathers who have a lower perception level of their parenting competence not only display inadequate parental skills, but also tend to avoid interactions with their children (Ohan *et al*, 2000). However, in order to enhance positive parenting role behaviors with intervention, a valid, reliable instrument for the assessment of parenting competence is needed.

The Parenting Sense of Competence scale (the PSOC scale), designed by Gibaud-Wallston and Wandersman (1978), is a widely used measure to assess perceived abilities to manage the demands of parenting, both in fathers and mothers (Copeland and Harbaugh, 2004; Giallo *et al*, 2008; Gilmore and Cuskelly, 2008). The PSOC scale measures parenting ability with two subscales: skill/knowledge and valuing/comfort.

The scale was examined in several

different cultural contexts, such as those in Canada (Johnston and Mash, 1989; Ohan *et al*, 2000), Australia (Rogers and Matthews, 2004; Gilmore and Cuskelly, 2008), and Hong Kong (Ngai *et al*, 2007). The PSOC scale has demonstrated reliable psychometric properties in previous studies.

The construct validity was reported as a good fit and accounted for 40-54%, 43-52%, and 36% of the variance in the father, mother (Ohan *et al*, 2000; Rogers and Matthews, 2004; Gilmore and Cuskelly, 2008), and both (Johnston and Mash, 1989), respectively. The reported internal consistency using Cronbach's alpha coefficient ranged from 0.79 to 0.87 (Knauth, 2000; Gilmore and Cuskelly, 2008; Herren *et al*, 2013).

Studies on the father's role in Thailand found different assessment measures, such as parenting self-efficacy (Kongnguen, 2002), father tasks (Sangawong, 2002), self-confidence (Naunboonruang, 2002), and father involvement (Sukparin, 2002; Raojutitham, 2006). However, measure of the father's competence is limited in the Thai population. Because the PSOC scale, a well-validated measure, has been utilized to assess parenting capacity in different cultures (Cefai *et al*, 2010; Gao *et al*, 2012; Kettani and Zaouche-Gaudron, 2012; Herren *et al*, 2013), it was adopted for use in our studies to assess fathers' competence. However, with cross-cultural concern in developing the Thai PSOC scale, a precise translation and validation method would be crucial before the revision of the PSOC scale could be used in studies with Thai fathers. The research question was as follows: Is the Thai version of the PSOC scale suitable for measuring the parenting competence of fathers in Thailand? Therefore, the study

aimed at developing and investigating the validity and reliability of the Thai version of PSOC scale in Thai fathers.

MATERIALS AND METHODS

The study was carried out in two phases. The first phase involved translating the PSOC scale from English into Thai and the content examined for validity. The second phase involved testing the validity and reliability of the Thai PSOC scale.

Phase 1: Translation of the PSOC scale and content validity assessment

The original 17-item PSOC scale produced by Gibaud-Wallston and Wandersman (1978) was translated from English into Thai using the forward and back translation technique. Two bilingual translators, who were experts in maternal and child nursing, translated the PSOC scale from English to Thai. After completing the translation to Thai, a third bilingual translator, blinded from the English version, was asked to translate the Thai version back into English. Then, both the original English version and Thai version of the PSOC scale were re-examined and compared in terms of the conceptual equivalence between the original and back-translation versions, focusing on conceptual meanings. The word "parent" was replaced with "father" to reflect the scale's planned future use with fathers as research subjects.

Experts assessed the content validity between the original and the translated versions. Five bilingual experts in the field of maternal and child nursing were asked to evaluate the relevance and clarity of content in the draft Thai PSOC scale using the content validity index (CVI) with a 4-point rating scale. Of the 17 items, 14

items were rated by all experts as 3 or 4, resulting in a CVI of 0.82. After completing the translation process, a pilot test was conducted with 10 fathers. All reported understanding of the words in the document. The fathers completed the scale in approximately 5 minutes.

Phase 2: Test of construct validity and reliability

Subjects and procedure. The study was conducted from May to September 2012 in a community hospital in the eastern region of Thailand where the number of births is over 2,000 babies per year. A sample of 195 fathers-to-be/fathers was recruited based on the recommended minimum sample size for factor analysis, 10 cases for each item (Hair *et al*, 2010). To obtain a representative sample of fathers-to-be/fathers at different prenatal and postnatal periods, a sample of 65 subjects was recruited from each of three stratified stages of prenatal and postnatal periods of their partners: at 28 weeks gestation or more, 2-3 days after childbirth, and 4 weeks after childbirth. Subjects who visited the antenatal and postnatal care units with their partners and met the inclusion criteria (male, 18 years of age or older whose partners and babies were without complications, living with their partners, and able to read the Thai language) were invited to participate in this study.

Ethical considerations

The study received Institutional Review Board (IRB) approval by the Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University (MUPH 2012-129, 2012 Apr 25). Prior to testing of the Thai PSOC scale, the subjects were informed of the purpose of the study and signed a consent form to document their voluntary participation. Then, they were asked to complete the

scale that required about 5 minutes of their time.

Measures and data analysis

The 17-item Thai PSOC scale consists of two subscales: 8 items (Item 1, 6, 7, 8, 10, 11, 13, and 15) evaluate skill/knowledge, and 9 items (Item 2, 3, 4, 5, 9, 12, 14, 16, and 17) evaluate perceived valuing/comfort. Responses to positive items (Item 1, 6, 7, 10, 11, 13, 15, and 17) ranged from 1 (strongly disagree) to 6 (strongly agree). Rating scores were reversed for negative items (Item 2, 3, 4, 5, 8, 9, 12, 14, and 16). The total score range was 17 to 102 with higher total scores suggesting fathers' higher sense of parenting competence.

Data were analyzed using the SPSS® for Window with Amos™ (version 18.0; IBM, Armonk, NY). The descriptive statistics summarized the subjects' demographic characteristics. The CFA, through structural equation modeling with maximum likelihood method, was applied to assess the construct validity. After checking and cleaning the data, factorability of the questionnaire was investigated by using the measure of sample adequacy (MSA), the Kaiser-Meyer-Olkin test (KMO) and the Bartlett's test of sphericity (Tabachnick and Fidell, 2007; Hair *et al*, 2010).

The overall model fit was evaluated using goodness of fit indices, such as relative chi-square (χ^2/df), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square error of approximation (RMSEA), Normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). Determining adequate fit of the data, the χ^2/df below 2.0; RMSEA below 0.08; and other indices above 0.90 (Hair *et al*, 2010) indicated good model fit. For internal consistency, Cronbach's alpha coefficients greater than 0.7 were considered as adequate construct

reliability (Hair *et al*, 2010).

RESULTS

Sample characteristics

The average age of subjects was 28.73 years (SD=5.62) and ages ranged from 20 to 47 years with 51.8% between 21 and 30 years. Fifty-five point nine percent had a junior and senior high school education level (33.3% and 22.6%, respectively) while only 7.7% completed degree level. Three-fourths were employed (74.9%) and 14.4% were in business or traders. The average income was THB 12,764.10 / month (SD=7,056.57) with 80% receiving less than THB 20,000 /month. Two-thirds were first time fathers (69.2%) and one-third (30.8%) had experience with baby care previously. Concurrently, 55.4% were nuclear families and 44.6% lived as extended families.

Descriptive statistics of the Thai PSOC scale

Descriptive data for each item of the 17-item Thai PSOC scale are shown in Table 1. The mean value of the items ranged from 3.55 (SD=1.69) to 5.49 (SD=0.91). The total mean score was 73.92 (SD=11.63). Upon inspection of the subscales, the skill/knowledge score ranged from 14 to 48 with a mean score of 37.83 (SD=5.73) and the valuing/comfort score ranged from 15 to 54 with a mean score of 36.09 (SD=8.78).

Construct validity of the Thai PSOC scale

Prior to factor analysis, the MSA for each variable displayed greater than 0.5 (range 0.61 to 0.86), the KMO test was 0.78, and the Bartlett's test of sphericity was statistically significant ($\chi^2=911.55$, $df=136$, $p<0.001$), indicating an adequate sample size to be grouped.

Test of the original model. The 17-item Thai PSOC scale-based model, consisting of

Table 1
Means, standard deviations, and factor loadings of the items of the Thai PSOC scale.

Item statement	\bar{X}	SD	Factor loading	
			M1 ^a	M2 ^b
Skill/knowledge subscale (range 14-48)	37.83	5.73		
1 The problems of taking care of a baby are easy to solve once you know how your actions affect your baby, an understanding I have acquired.	5.1	1.1	0.51	0.51
6 I would make a fine model for a new father to follow in order to learn what he would need to know in order to be a good parent.	5.11	1.12	0.64	0.64
7 Being a parent is manageable, and any problems are easily resolved.	4.81	1.04	0.62	0.62
8 A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	4.32	1.53	0.21	0.21
10 I meet my own personal expectations for expertise in caring for my baby.	3.97	1.32	0.43	0.43
11 If anyone can find the answer to what is troubling my baby, I am the one.	4.60	1.31	0.46	0.46
13 Considering how long I've been a father, I feel thoroughly familiar with this role.	5.15	1.21	0.6	0.6
15 I honestly believe I have all the skills necessary to be a good father to my baby.	4.77	1.1	0.68	0.68
Valuing/comfort subscale (range 15-54)	36.09	8.78		
2 Even though being a parent could be rewarding, I am frustrated now while my child is only an infant.	3.93	1.62	0.29	0.29
3 I go to bed the same way I wake up in the morning--feeling I have not accomplished a whole lot.	3.76	1.62	0.62	0.62
4 I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	3.76	1.46	0.63	0.63
5 My father was better prepared to be a good father than I am.	4.06	1.86	0.63	0.63
9 Sometimes I feel like I'm not getting anything done.	3.82	1.51	0.77	0.77
12 My talents and interests are in other areas, not in being a parent.	3.97	1.67	0.75	0.75
14 If being a father of an infant were only more interesting, I would be motivated to do a better job as a parent.	3.75	1.77	0.67	0.67
16 Being a parent makes me tense and anxious.	3.55	1.69	0.34	0.34
17 Being a good father is a reward in itself.	5.49	0.91	0.17	-
Total scale (range 30-98)	73.92	11.63		

^aM1, Original model (17-item); ^bM2, Revised model (16-item).

Table 2
Goodness of fit measures of the Thai PSOC scale.

Model	χ^2	df	χ^2/df	RMSEA	GFI	NFI	TLI	CFI	AGFI
Original model	262.96	118	2.23	0.08	0.88	0.72	0.79	0.82	0.84
Revised model	168.23	103	1.63	0.06	0.91	0.80	0.90	0.91	0.88

Table 3
Internal consistency of the Thai PSOC scale.

Model	Cronbach's alpha	
	Original model	Revised model
Total scale	0.79	0.78
Skill/knowledge subscale	0.73	0.73
Valuing/comfort subscale	0.79	0.80

two factor structures, skill/knowledge and valuing/comfort, was initially evaluated. Using CFA procedure, the result showed the goodness of fit indices of the original model was acceptable ($\chi^2/df=2.23$ of criteria, 2.0 to 5.0 (Hair *et al*, 2010), RMSEA=0.08 of criteria, 0.08 to 1.0 (Meyers *et al*, 2006), and GFI=0.88 of criteria, 0.80 (Simon *et al*, 2010), whereas the other indices were slightly less than the cut-off criteria for a good fit (AGFI=0.84, CFI=0.82, TLI=0.79, NFI=0.72) (Table 2). The overall correlation between the two factors was 0.23.

All items of this scale were loaded significantly to their principal subscales, except for Item 17, which was below the cut-off point of 0.20 ($p>0.05$), which indicated inappropriate estimation (Ngai *et al*, 2007). Factor loadings within the skill/knowledge subscale ranged from 0.21 to 0.68, and that within the valuing/comfort subscale ranged from 0.17 to 0.77 (Table 1).

Test of the revised model. Based on previous studies (Johnston and Mash, 1989; Ohan *et al*, 2000; Ngai *et al*, 2007) and the CFA results of the original model, Item 17 should be eliminated from the valuing/comfort factor. Therefore, a 16-item revised Thai model was analyzed for improving the model fit. Compared to the original model, the fit indices' values in the revised model were significantly higher, and the χ^2/df and RMSEA was lower, more closely approaching the criterion indicative of a good fit. Inspection of the goodness-of-fit indices indicated that both the χ^2/df (1.63) and RMSEA (0.06) decreased, while GFI (0.91), AGFI (0.88), NFI (0.80), TLI (0.90), and CFI (0.91) all increased, reaching the minimum criteria for acceptability for AGFI and NFI (Simon *et al*, 2010) and good fit for all others (Hair *et al*, 2010) (Table 2).

Inspection of factor loading is provided in Fig 1. The overall correlation between the two factors was 0.22. Factor loadings on the skill/knowledge subscale ranged from 0.21 to 0.68, with those of the valuing/comfort subscale ranging from 0.29 to 0.77 (Table 1). All factor loadings were significant and were above the cut-off point of 0.20 (Ngai *et al*, 2007). In addition, over 80% of items had item loadings above 0.4, indicating a moderate-to-strong association among items in each subscale.

The modification indices were reviewed to assess the possibility of improving the model's fit with the data; however,

DISCUSSION

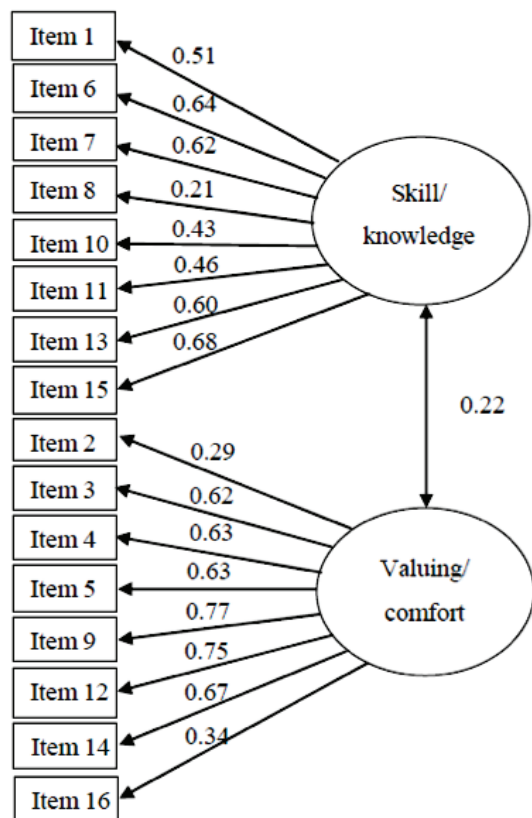


Fig 1—Confirmatory factor analysis of revised model of the Thai PSOC scale.

the review did not support the addition of paths to improve the fit of the revised model. Therefore, it was concluded that the revised model of the Thai PSOC scale provided a better overall fit of the data for Thai fathers as compared to the original model.

Reliability of the Thai PSOC scale

Cronbach's alpha coefficients in the original model were 0.79, 0.73, and 0.79, while in the revised model they were 0.78, 0.73, and 0.80 for total scale, skill/knowledge subscale, and valuing/comfort subscale, respectively, indicating acceptable reliability (Table 3).

The current study describes the development and assessment of the Thai PSOC scale for measuring Thai fathers' perceptions of their parenting competence. The PSOC scale is an instrument for measuring parents' sense of their abilities both in knowledge and skill to manage the parenting role and their satisfaction in the parental role. The English version of the PSOC scale was translated into Thai using a forward and back translation technique. This technique helped to maintain the conceptual and semantic equivalence of the Thai PSOC scale (Maneesriwongul and Dixon, 2004; Ahn *et al*, 2011) and was similar to other studies reporting this technique (Ngai *et al*, 2007; Hashim *et al*, 2011). Five experts then validated the content. The Thai PSOC scale content was evaluated as valid, suggesting that the items could represent the domains of parenting competence.

The Thai PSOC scale demonstrates a reliable and valid instrument for assessing the parenting competence of Thai fathers. The total scale and both subscales in the Thai PSOC had good internal consistency with Cronbach's alpha coefficients at a generally accepted standard of 0.70 (Hair *et al*, 2010). Similar reliability estimates were observed in previous studies where Cronbach's alpha coefficients ranged from 0.79 to 0.83 for the total scale (Gibaud-Wallston and Wandersman, 1978; Kettani and Zaouche-Gaudron, 2012; Herren *et al*, 2013).

Of the subscales, the skill/knowledge ranged from 0.74 to 0.77 and the valuing/comfort subscale ranged from 0.75 to 0.80 (Ohan *et al*, 2000; Rogers and Matthews, 2004; Gilmore and Cuskelly, 2008; Cooklin *et al*, 2012). These findings suggest there is internal homogeneity among items.

The CFA with maximum likelihood supported the two factors in the revision of the Thai PSOC scale based on Gibaud-Wallston and Wandersman (1978), reflecting the dimensions of skill/knowledge and valuing/comfort since the original model of the Thai PSOC scale demonstrated certain non-acceptable goodness of fit indices. All parameter estimates, except item 17 "Being a good father is a reward in itself" were statistically significant. Over 80 % of items demonstrated moderate to strong factor loadings.

The high factor loadings confirm the high correlation between statement and factor in the Thai PSOC scale. With significant factor loadings, only Item 17 was eliminated from the valuing/comfort subscale because of factor loading less than the cut-off point of 0.20 (Ngai *et al*, 2007). This is similar to the factor structure identified in several contexts (Johnston and Mash, 1989; Ohan *et al*, 2000; Ngai *et al*, 2007; Gilmore and Cuskelly, 2008).

However, further analysis is necessary to find out why this item did not fit. It is possible that in the Thai culture the meaning of Item 17 is just asking if the participant is a good father when they answered 'agree' or 'strongly agree'; in other words, fathers have difficulty distinguishing their responsibility from their satisfaction as fathers. Inspection of the skill/knowledge and valuing/comfort subscales shows positively significant correlation, which is consistent with prior investigations (Ngai *et al*, 2007; Gilmore and Cuskelly, 2008). Thus, the findings provide evidence of construct validity of the Thai PSOC scale in measuring Thai fathers' perception of competence in the parental role.

The total mean score of parenting competence in this sample is relatively

high, similar to the mean for fathers in Western societies (Gibaud-Wallston, 1977; Gilmore and Cuskelly, 2008). This may be because of recent social changes in Thailand, such as increasing maternal participation in the labor force and the emergence of smaller families, which is a change from the extended families to more nuclear family households. Therefore, it is possible that the strong sense of parenting competence may be associated with the perceptions of Thai fathers regarding cultural transformations and their involvement in childrearing.

Of interest, the three highest mean scores were the competence in parenting role while the four lowest mean scores were related to stressful events in life. It can be surmised that Thai fathers have positive attitudes toward fatherhood and high self confidence to perform the parenting job, but are worried as over 50% of this sample were first time fathers in nuclear families.

The Thai PSOC scale is a feasible instrument to assess potential parenting competence among Thai fathers during the third trimester of pregnancy and neonatal period. The Thai PSOC scale is a useful instrument because it is short in length and easily comprehended. The subjects required only about five minutes to complete this scale, and no questions were asked during or after completing the self-administered questionnaire. It can be utilized as a rapid assessment instrument to explore the association of skill/knowledge and valuing/comfort with fathers' behaviors in childrearing and evaluate the effectiveness of father training intervention.

The limitations of this study are recognized. Validation of the Thai PSOC scale was initially tested for a particular

group of fathers: those whose partners were in the prenatal and postnatal time periods, with low socioeconomic status. The sample size was also relatively small, even though number of subjects recruited exceeded the minimum estimated sample size (Hair *et al*, 2010). Therefore, these are likely to affect the generalizability of the findings. In the future study, testing should include diverse groups of fathers such as young fathers, fathers of older children, and from clinical sittings, using a larger sample size (Rogers and Matthews, 2004; Gilmore and Cuskelly, 2008).

Using a self-report scale has its disadvantages in the assessment of actual competence. The response reflecting the competence—skill/knowledge and valuing/comfort—is the competence at the time of assessment and is also subjective. The measure used in this study was not tested in association with other standard measures. However, in prior studies, the PSOC scale has associations with other similar measures such as parenting self-esteem (Johnston and Mash, 1989), parenting function (Rogers and Matthews, 2004), parenting self-efficacy (Giallo *et al*, 2008), and child-rearing practices (Gilmore and Cuskelly, 2008), and with observed parent and child behaviors (Johnston and Mash, 1989). Thus, use of the Thai PSOC scale to evaluate father-training intervention requires an understanding of its limitations and, therefore, along with the administration of the scale other methods of measurement such as interview and observation may be warranted.

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