Validity of the General Perceived Self-Efficacy Scale

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Abstract

Objective The present study was aimed at examining and verifying the psychometric properties of the General Perceived Self-Efficacy Scale applied to Thai clients.

Method A Thai version of the General Perceived Self-Efficacy Scale was administered to 103 amphetamine-dependent clients at the outpatient unit in the Northeastern Drug Department Treatment Center, Khon Kean. Principal components and confirmatory factor analyses were performed to test the construct validity of the scale.

Results The results showed that the Thai version of the General Perceived Self-Efficacy Scale has satisfied validity and reliability. Both components and confirmatory factor analyses provided evidence of construct validity.

Conclusion The scale could be a benefit of future studies in assessing general perceived self-efficacy. **J Psychiatr Assoc Thailand 2001; 47(1): 31-37.**

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The construct of self-efficacy was firstly introduced by Bandura in social cognitive theory.[1] Self-efficacy is the belief in one's capabilities to organise and execute the source of action in response to a prospective situation.[2] According to theory and research, self-efficacy differentiates among the people on how they feel, think and act.[3] In terms of feeling, a low sense of self-efficacy is usually associated with one's depression, anxiety and helplessness. Regarding to thinking, a strong sense of competence facilitates cognitive processes and performance in a variety of settings. Self-efficacy levels determine the initial decision as to perform a behaviour, the effort expended and persistence in the face of unwanted situations.[1]

Self-efficacy has been recognised as being a very context specific. However, some researchers have conceptualised that as a generalised sense of self-efficacy.[4,3] Thus, an individual's past experiences with success and failure would result in a general set of expectations while carrying into new situations.

The present study was aimed to examine and verify psychometric properties of the General Perceived Self-Efficacy Scale[5] in a Thai version. Also, the scale was tested against the unidimensional concept using exploratory and confirmatory factor analyses. Therefore, this scale would provide a tool for any future self-efficacy studies. More specifically, the scale may be later used for determining the clients' therapy progress, as those were from different expectation of self-efficacy.

Method

The participants were composed of 103 amphetamine-dependent clients at outpatient unit of the Northeastern Drug Department Treatment Center, Khon Kean between September 2001 and January 2002. Criteria for participants' inclusion were that all those could understand the questions being asked and no sign of hallucinations or delusions. Participants were excluded from the study if their consents were not obtained.

Instrument

The German version of the General Perceived Self-Efficacy Scale was originally developed by Jerusalem and Schwarzer in 1981, first as a 20 items and later reduced into 10 items. The original German instrument has been showed to be reliable and valid when applying in various situations.[3,5,6] Also the scale were already proved and validated with different 26 cultures, including English, Chinese, Indonesian, Japanese as well as Korean.[6] The assumption was that self-efficacy was likely to be a universal construct. Therefore, it could be applied to different cultures and could be measured by inventories in different languages. Internal consistencies of the scale have been reported with its alpha ranged from .75 to .91. The present study utilised the English version while the investigator translated into Thai. The back translation was performed by bilingual speakers. The response ranged at each item was 1 to 4 representing the scale from with not at all true to exactly true.

Statistical Analysis

Data were analysed using principal component factor analysis to determine the minimal number of factors that underlie the observed variables. Only loadings equal to or greater than .30 were regarded

as significant.[7] Also, confirmatory factor analysis was performed to test the model using the LISREL 7 computer program.[8] The model fit was evaluated in terms of chi-square, root mean square residuals and a goodness of fit index. The chi-square divided by the degree of freedom was proved as a less biased fit estimate than the chi-square itself considered being satisfactory.[9,10] The Goodness of Fit Index (GFI) should be above .90.

Results

The participants consisted of 103 persons including 95 men and 8 women. Age was between 14 and 25 years old with an average of 18.82. Sixty-four persons have no income while 25 earned less than 4,000 Baht per month. The remaining has an income higher than 4,000 Baht per month. The majority of participants was single (93 persons). Most participants were Buddhist (100 persons).

Internal Consistency

Figure 1 shows the frequency distribution of the self-efficacy sum score. This comes close to a normal distribution with standard deviation = 5.63, kurtosis = .22 and skewness = -.34. The range of sum score was from 11 to 39. The Cronbach alpha coefficient of .84 was obtained for the scale with item means 2.60 and a scale mean 26.03. The alphas for all items were also greater than .70. All item means and corrected item-total correlations are given in Table 1.
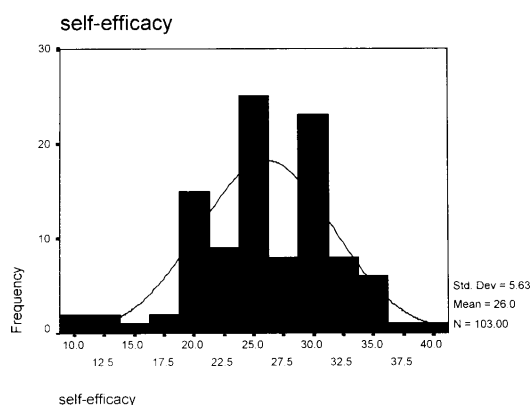

Fig 1   Frequency Distribution of the Self-Effi cacy Sum Score

Exploratory and Confirmatory Factor Analyses

Principal component analysis showed the two dimensionality of the scale, with eigenvalues of 4.22 and 1.05. The scree tests also suggested two-factor solutions. A first component of the variance was accounted for 42.22%. A second component was account for 10.59% of the variance. The results indicated that the two items, 5 and 10, loading on both two factors. The ten loadings for the first component are showed in Table 1.

When confirmatory factor analysis was performed, the one factor model was tested using the LISREL. Input was a correlation matrix of the ten observed variables, and the parameters were estimated by the unweighted least squared method. The one-dimension confirmatory factor analysis yielded the factor loadings in the last column of Table 1. The results displayed that an adequate fit was obtained. The squared multiple correlation (R^2) was close to 1.00 representing a good model. The χ^2/df was also showed to be 55.89/35 = 1.59. This

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value clearly represented an acceptable fit to the observed data. T values revealed all parameter estimates to be substantial. The magnitude of all estimates was more than 2, indicating that they were statistically significant and thus essential to the model.

Table 1   Means Corrected Item-Total Correlation and Factor Loadings of the Ten Self-Efficacy Items

Item	Mean	Correlation	Factor loading (PCA)		Lambda X (LISREL)
			Factor1	**Factor2**	
1. I can always manage to solve different problems if I try hard enough.	2.59	.56	.68	-	.64
2. If someone opposes me, I can find the ways and means to get what I want.	2.58	.51	.62	-	.55
3. It is easy for me to stick to my aims and accomplish my goals.	2.62	.46	.56	-	.46
4. I confident that I could deal efficiently with unexpected events.	2.61	.52	.63	-	.57
5. Thank to my resourcefulness, I know how to handle unforeseen situations.	2.54	.27	.34	.74	.28
6. I can solve most problems if I invest the necessary effort.	3.01	.61	.72	-	.67
7. I can remain calm when facing difficulties because I can rely on my coping abilities.	2.45	.53	.64	-	.59
8. When I am confronted with a problem, I can usually find several solutions.	2.70	.64	.74	-	.71
9. If I am in trouble, I can usually think of a solution.	2.56	.70	.79	-	.78
10. I can usually handle whatever comes my way.	2.34	.56	.66	.40	.62

Note: Lambda χ^2 = 55.89 (χ^2/df = 1.59) 35 df, p.>01, GFI = .90, AGFI = .85, RMR = .06, R^2 = .87

Discussion

The study results are consistent to what Schwarzer[3] found while the Thai version of the General Perceived Self-Efficacy Scale provided a basis for assessing the equivalence to the English version in some aspects. The scale also has an adequate reliability. The psychometric properties of the Self-Efficacy Scale tested were satisfactory and consistent with previous studies.[5] However, principal component analysis did not confirmed the unidimensionality as the two items have been reported to be complex variables. The confirmatory factor analysis could display the analysis result, being the unidimensional factor structure. This may be because the participants perceived different meanings with the items in the questions. Also the small size of participants may be another source of variation. Although the mean levels of composite scores should be interpreted with cautious, it could be recommended to use the instrument for further studies within countries with larger participants and/or other populations.

Acknowledgements

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Appendix

ข้อความ	จริงมากที่สุด	จริงพอสมควร	จริงเล็กน้อย	ไม่เป็นความจริง
1. ฉันสามารถแก้ปัญหายาก ๆ ได้เสมอ				
2. ฉันสามารถจัดการกับสิ่งที่ต้องการได้ถึงแม้ผู้อื่นจะไม่เห็นด้วย				
3. ฉันสามารถทำสิ่งที่ฉันต้องการได้เสมอ				
4. ฉันสามารถเผชิญกับเหตุการณ์ที่คาดไม่ถึงได้เป็นอย่างดี				
5. ฉันแก้ไขเหตุการณ์ที่คาดไม่ถึงอยู่ได้เสมอ				
6. ฉันสามารถแก้ปัญหาส่วนใหญ่ได้หากฉันใช้ความพยายาม				
7. ฉันสามารถเผชิญปัญหาโดยไม่มีท่าทีรุกรี้รุกรน				
8. เมื่อฉันเผชิญปัญหา ฉันจะหาทางแก้ปัญหาไว้หลาย ๆ ทาง				
9. เมื่อมีอุปสรรคฉันสามารถคิดวิธีการแก้ปัญหาได้เสมอ				
10. ฉันสามารถจัดการสิ่งต่าง ๆ ได้เป็นประจำไม่ว่าปัญหานั้นจะมาในรูปแบบแบบไหน				

ความเที่ยงตรงของแบบสอบถาม
การรับรู้ในความสามารถตนเอง

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บทคัดย่อ

วัตถุประสงค์ เพื่อตรวจสอบโครงสร้างและความเที่ยงตรงของแบบสอบถามการรับรู้ในความ
สามารถของตนเอง

วิธีการศึกษา นำเอาแบบสอบถามการรับรู้ในความสามารถของตนเองฉบับแปลภาษาไทยจาก
ภาษาอังกฤษ (Schwarzer, 1997) ไปใช้กับผู้ติดสารเสพติดที่มาบำบัด ณ ห้องผู้ป่วยนอก ศูนย์
บำบัดรักษายาเสพติดภาคตะวันออกเฉียงเหนือ จ.ขอนแก่น จำนวน 103 คน และวิเคราะห์ข้อมูล
ด้วย principal component analysis โดยกำหนดค่า factor loading ไม่น้อยกว่า .30 และยืนยัน
องค์ประกอบด้วย confirmatory factor anlysis.

ผลการศึกษา พบว่าแบบสอบถามการรับรู้ในความสามารถของตนเองฉบับนี้ เป็นแบบสอบ
ถามที่มีความน่าเชื่อถือ มีความเที่ยงตรงด้านโครงสร้างทั้งการทดสอบด้วย principal
component analysis และ confirmatory factor analysis

สรุป แบบสอบถามนี้น่าจะเป็นประโยชน์ในการศึกษาในเรื่องที่เกี่ยวข้องกับการรับรู้ในความ
สามารถของตนเองต่อไปในอนาคต **วารสารสมาคมจิตแพทย์แห่งประเทศไทย 2545;
47(1): 31-37.**

คำสำคัญ การรับรู้ในความสามารถของตนเอง ตรวจสอบโครงสร้าง ความเที่ยงตรง

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**พยาบาลวิชาชีพ ศูนย์บำบัดรักษายาเสพติดภาคตะวันออกเฉียงเหนือ อ.เมือง จ.ขอนแก่น