Validity of the General Perceived Self-Efficacy Scale

Vatinee Sukmak, RN., Ph.D. (Psychology)*
Acharee Sirisoonthon, R.N. B.N.S**
Prapapron Meena, R.N. M.S.N*

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.


Key words: self-efficacy, construct validation

*Faculty of Nursing, Mahasarakham University, Kantaravichai Mahasarakham 44150
**Northeastern Drug Department Treatment Center, Khon Kean 40000
The construct of self-efficacy was firstly introduced by Bandura in social cognitive theory. Self-efficacy is the belief in one's capabilities to organise and execute the source of action in response to a prospective situation. According to theory and research, self-efficacy differentiates among the people on how they feel, think and act. 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.

Self-efficacy has been recognised as being a very context specific. However, some researchers have conceptualised that as a generalised sense of self-efficacy. 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 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. Also the scale were already proved and validated with different 26 cultures, including English, Chinese, Indonesian, Japanese as well as Korean. 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 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. Also, confirmatory factor analysis was performed to test the model using the LISREL 7 computer program. 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. 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.

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 $\chi^2$/df was also showed to be 55.89/35 = 1.59. This
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

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

Note: Lambda $\chi^2 = 55.89$ ($\chi^2$/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

The authors would like to thank the research grant supported from Mahasarakham University and particularly clients at the Northeastern Drug Department Treatment Center, Khon Kean.

References

### Appendix

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<th>แปลงสมทบ</th>
<th>แปลงเล็กน้อย</th>
<th>ไม่ว่าจะอย่างไร</th>
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<td>1.</td>
<td>ด้านสมการแก้ปัญหาหลายๆได้เสมอ</td>
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<td>2.</td>
<td>ด้านสมการจัดการกับสิ่งที่ต้องการ ได้แก้แล้วนะซึ่งไม่เหมือนด้วย</td>
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<td>3.</td>
<td>ด้านสมการที่ขึ้นต่อการได้เสมอ</td>
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<td>4.</td>
<td>ด้านสมการแสดงถึงบทพูดการที่ คาดไม่ถึงได้เป็นอย่างดี</td>
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<td>5.</td>
<td>ด้านแก้ปัญหาที่คาดไม่ถึงได้ ได้เสมอ</td>
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<td>6.</td>
<td>ด้านสมการแก้ปัญหาส่วนใหญ่ได้ หากฉันให้ความพยายาม</td>
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<td>7.</td>
<td>ด้านสมการแก้ปัญหาโดยไม่มี ทำให้เกิดรุนแรง</td>
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<td>8.</td>
<td>เมื่อฉันแก้ปัญหา ฉันจะหาทาง แก้ปัญหาในหลาย ๆ ทาง</td>
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<td>9.</td>
<td>เมื่อมีปัญหาฉันสามารถตัดสินการ แก้ปัญหาได้เสมอ</td>
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<td>10.</td>
<td>ด้านสมการจัดการสิ่งต่าง ๆ ได้เป็น ประจำไม่ว่าปัญหานั้นจะมีใน รูปแบบแบบไหน</td>
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บทความของแบบสอบถาม
การรับรู้และความสามารถตนเอง

เวทีนิศ ศุมนัย ว.ท.น (พยายาม)*
อัจฉริย์ ศิริสุนทร พ.บ. (พยายาม)**
ประภาวัตร มีนา พ.ม. (พยายาม)*

บทคัดย่อ

วัตถุประสงค์ เพื่อตรวจสอบโครงสร้างและความเที่ยงตรงของแบบสอบถามการรับรู้ในความ
สามารถตนเอง

วิธีการศึกษา นำแบบสอบถามการรับรู้ในความสามารถของตนเองฉบับแปลภาษาไทยจาก
ภาษาอังกฤษ (Schwarzer, 1997) ไปใช้กับผู้มีคุณสมบัติที่เหมาะสม ณ ห้องปฏิบัติรูป ศูนย์
บริการวิชาการสุขภาพพลังงาน จุฬาลงกรณ์ จำนวน 103 คน และวิเคราะห์ข้อมูล
ด้วย principal component analysis โดยกำหนดค่า factor loading ไม่น้อยกว่า .30 และข้อมูล
ของประกอบด้วย confirmatory factor analysis.

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

สรุป แบบสอบถามนี้มีการเป็นประโยชน์ในการศึกษาในเรื่องที่เกี่ยวข้องกับการรับรู้ในความ

คำสำคัญ การรับรู้ในความสามารถของตนเอง ตรวจสอบโครงสร้าง ความเที่ยงตรง

*อาจารย์ประจำคณะพยายามศาสตร์ มหาวิทยาลัยมหาสารคาม อาจารย์ 100 ปี
สมาคมพระครูศิวะ สงครามเรือง ผู้บริหารทวิชัย จ.มหาสารคาม 44150
**พยาบาลวิชาชีพ ศูนย์บริการรักษาสุขภาพพลังงาน จุฬาลงกรณ์ องค์การ จ.ธนบุรี