EXPLORING THE FACTOR STRUCTURE OF THE TAIPEI EVIDENCE-BASED PRACTICE QUESTIONNAIRE IN TAIWANESE REGISTERED NURSES

Shih-Chun Lin[1,2], Chia-Jung Chen[1], Malcolm Koo[3], Li- Chuan Cheng[1*]

[1]Department of Nursing, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Dalin, Taiwan

[2]Graduate Institute of Nursing, National Taipei University of Nursing and Health Sciences, Taipei City, Taiwan

[3]Department of Nursing, College of Nursing, Tzu Chi University, Hualien City, Hualien, Taiwan

Background

◆ Evidence- based practice (EBP) is an essential component of healthcare practice, ensuring the delivery of high- quality and efficient patient care [1]

◆ Despite its recognized importance, the adoption and implementation of EBP among healthcare professionals vary widely [2, 3]

◆ The Taipei Evidence-Based Practice Questionnaire (TEBPQ) was developed to assess healthcare worker's competencies and attitudes toward evidence- based practice (EBP) [4]

Purpose

◆ This study aims to explore the factors structure of the TEBPQ among registered nurses, contributing to the refinement and validation of the instrument

Methods

◆ A cross-sectional questionnaire survey was conducted on 646 registered nurse (600 female, 92.9%) from a regional teaching hospital in southern Taiwan

◆ Participants completed the 26-item TEBPQ on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree)

◆ Exploratory factor analysis using principal axis factoring with direct oblimin rotation, and the number of factors determined based on parallel analysis

◆ All analyses were conducted using Jamovi software, version 2.4

The Taipei Evidence-Based Practice Questionnaire (TEBPQ)

Domain	Item
Ask	1. I am able to construct background questions. 2. I am able to construct answerable questions using PICO. 3. I am able to differentiate the types of clinical questions. 4. I am able to raise questions constantly in my daily work. 5. I am able to record clinical questions for later answering.
Acquire	6. I am able to define appropriate keywords for searching. 7. I know the best sources of current evidence for my clinical discipline. 8. I know how to find the best evidence to solve my clinical questions. 9. I am able to find the best evidence in 15 minutes. 10. I am able to use more than one database for widening the scope of information. 11. I am able to use the advanced function of search engine. 12. I am able to save keywords and searching strategies for future updating.
Appraisal	13. I understand the commonly used terms in evidence-based medicine. 14. I am able to understand 'level of evidence' of a paper. 15. I am able to appraise literature critically. 16. I am able to create appraisal summaries.
Apply	17. I am able to apply literature evidence to my clinical practice. 18. I can reiterate evidence as plain language for patients. 19. I am able to make appropriate decision while clinical experiences are different from literature evidence. 20. I am able to evaluate clinical outcomes by evidence-based quality indicators. 21. I am able to integrate 3 "E"s for clinical decision making. 22. I am able to apply evidence-based clinical guidelines in healthcare.
Attitude	23. I think the concept of evidence-based practice (EBP) has been emphasized in clinical settings. 24. I think clinical professionals should have knowledge and skill of EBP. 25. I think EBP can prevent healthcare disputes. 26. I think EBP competencies have helped significantly in my practice.

References

[1] Connor, L., Dean, J., McNett, M., Tydings, D. M., Shrout, A., Gorsuch, P. F., Hole, A., Moore, L., Brown, R., Melnyk, B. M...et al. (2023). Evidence- based practice improved patient outcomes and healthcare system return on investment: findings from a scoping review. *Worldviews Evid.–based Nurs., 20*, 6-15.

[2] Weng, Y. H., Kuo, K. N., Yang, C. Y., Lo, H. L., Chen, C., Chiu, Y. W. (2013). Implementation of evidence-based practice across medical, nursing, pharmacological and allied healthcare professionals: a questionnaire survey in nationwide hospital setting. *Implement. Sci. 8*, 112.

[3] Cardoso, D., Rodrigues, M., Pereira, R., Parola, V., Coelho, A., Ferraz, L., Cardoso, M. L., Ramis, M. A., Apóstolo, J. (2021). Nursing educators' and undergraduate nursing students' beliefs and perceptions on evidence-based practice, evidence implementation, organizational readiness and culture: an exploratory cross- sectional study. *Nurse Educ. Pract. 54*, 103122.

[4] Chen, K. H., Tzeng, P.C., Chen, T. H., Kuo, K. N., Liu, H. E. (2014). Develop a self-evaluation questionnaire for evidence-based practice education. *Am. J. Educ. Res. 2*. 740- 744.

Results

◆ The TEBPQ exhibited a high overall McDonald's omega (0.96), indicating excellent internal consistency

◆ The Kaiser-Meyer-Olkin measure was 0.95, and Bartlett's Test of Sphericity showed a significant p-value (<0.001)

◆ The analysis revealed a five-factor structure that explained 66.3% of the total variance

◆ The items within each factor were similar but not identical to the original structure proposed by the scale developers

Table 1. Basic characteristics of study participants (N = 600)

Variable	n (%)
Age, mean (SD)	34.4 (9.3)
Work duration, year, mean (SD)	11.8 (8.3)
Nursing level	
N, N1	177 (29.5)
N2	316 (52.7)
N3, N4	107 (17.8)
Educational level	
College	109 (18.2)
Undergraduate	451 (75.2)
Graduate	40 (6.7)

Table 2. Factor structure of the TEBPQ

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	0.483				
2	0.586				
3	0.369				
4		0.778			
5		0.787			
6		0.552			
7			0.472		
8			0.599		
9			0.616		
10			0.865		
11			0.737		
12			0.697		
13				0.587	
14				0.665	
15				0.803	
16				0.676	
17				0.536	
18				0.301	
19				0.586	
20				0.637	
21				0.566	
22				0.474	
23					0.604
24					0.841
25					0.817
26					0.933

Conclusion

◆ Our investigation into the TEBPQ among Taiwanese nurse revealed a refined five-factor structure, indicating a variation from the initially proposed domains

◆ This suggests a need for ongoing assessment of the TEBPQ to reflect EBP competencies among healthcare professionals

Contact info

Lin SC
df559699@tzuchi.com.tw