THE INDONESIAN VERSION OF EVIDENCE-BASED PRACTICE QUESTIONNAIRE (EBPQ): AN EVALUATION OF RELIABILITY

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ABSTRACT

Introduction: The use of evidence-based practice (EBP) has been demonstrated to increase the quality of patient care. However, the extent to which it is practiced in Indonesia is yet to be determined. It was necessary to develop a means of measuring EBP in order to acquire a profile of the use of EBP in Indonesia. The EBP questionnaire (EBPQ) developed by Upton and Upton was selected in the current study to evaluate the perceptions of healthcare workers regarding their knowledge of, attitudes toward, and practice of EBP. This questionnaire is widely recognized; however, an Indonesian version has not yet been developed. This study aimed to translate the EBPQ developed by Upton and Upton into Indonesian and to evaluate its reliability. **Method**: WHO framework on how to translate and adapt an instrument was applied. On completion of the forward translation and discussion process, backward translation of the EBPQ was performed, after which it was pretested and finalized. Reliability was tested by testing the questionnaire on 42 nurses at five hospitals in Depok and Jakarta. **Result**: Four words were changed. All items are valid. The reliability analysis resulted Cronbach's α of 0.96 (α = 0.92, 0.80, and 0.96 for practice, attitude, and knowledge, respectively). Thus, 24 translated statements determined to be valid and reliable, were included in the final version. Conclusion: The Indonesian translated version of the EBPQ proposed by Upton and Upton was demonstrated to be valid and reliable. Further studies on the perceptions of healthcare workers are warranted.

INTRODUCTION

The adoption of evidence-based practice (EBP) to assist the clinical decision-making of healthcare workers is important. EBP combines the best available evidence with clinical proficiency and client preferences (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996; Sigma Theta Tau International, 2005). Thus, it has been demonstrated to be beneficial in the healthcare setting. The use of EBP also contributes to improved patient outcomes (Joseph, 2007; Parran, 2004; Pearson et al., 2006) and enhanced job satisfaction among healthcare professionals (Parran, 2004). In addition, it facilitates the development of clinical guidelines (Turner, 2009).

Nevertheless, the advantages of practicing EBP are undervalued (McDonald et al., 2010). It was demonstrated that mother and infant deaths in south-east Asian countries, including Indonesia, were due to poor clinical practices in the South East Asia - Optimizing Reproductive and Child Health in Developing Countries study (McDonald et al., 2010). Lack of access to the best available evidence and the absence of skills needed to produce and interpret the evidence were cited as root causes. The use of EPB is sometimes misunderstood in clinical practice (Martis, Ho, and Crowther (2008). Thus, EBP-based research is vital for its implementation in south-east Asia.

The implementation of EBP in Indonesia has been encouraged in the nursing area through the legislation issued in 2005 (Indonesian Health Ministry, 2005) and then restated in 2014 (Indonesian Republic, 2014) Nevertheless, the Indonesian nurses' EBP remains inadequate (Stagner,

2017) and its studies remain scant. The extent to which it is practiced based on the Indonesian nurses' perspective is yet to be determined. A reliable instrument is needed to measure EBP perception of nurses in Indonesia, and is presently not available.

The EBP questionnaire (EBPQ) developed by Upton and Upton (2006) was selected in the current study as a self-report measure to enable an evaluation of healthcare workers' perceptions of their own EBPs. The questionnaire covers the relevant and practical aspects of EBPs used on a daily basis, and contains three subscales on the knowledge of, attitudes toward, and practice of EBP. The knowledge subscale comprises 14 statements, the attitudes subscale consists of four pairs of statements, and the practice subscale contains six statements. The 24 items are scored from 1–7. Positive responses are equated with a high score.

This questionnaire has been demonstrated to be a valid and reliable tool. Leung, Trevena, and Waters (2014) conducted a systematic review of 24 EBP instruments (including the EBPQ proposed by Upton and Upton [2006]) used to measure the knowledge, skills, and attitudes of nurses in this regard.

The questionnaire was shown to have adequate strength and internal consistensy of α = 0.87. It has also been widely translated, examined, and utilized to measure the EBPs of healthcare professionals (AbuRuz, Abu Hayeah, Al-Dweik, & Al-Akash, 2017; Ahmad et al., 2009; Ammouri et al., 2014; Brown, Wicklines, Ecoff, & Glaser, 2009; Gerrish, Ashworth, Lacey, & Bailey, 2008; Koehn & Lehman, 2008; Mollon et al., 2012; Pravikoff, Tanner, & Pierce, 2005; Upton, Upton, & Scurlock-Evans, 2017; Waters, Crisp, Rychetnik, & Barratt, 2009; Zhou, Hao, Guo, & Liu, 2016). However, an Indonesian version is not available. Therefore, the objectives of the current study were to translate the selected EBPQ into Indonesian and thereafter to evaluate its reliability.

METHOD

Translation of the evidence-based practice questionnaire

The World Health Organization's framework for instrument translation and adoption was applied to the translation process (World Health Organization, 2017). It involves four stages, (1) forward translation, (2) backward translation, (3) pretests and cognitive interviews, and (4) compilation of the final version. At the first stage, the EBPQ was translated by health and education professionals for whom Bahasa Indonesia was their first language and with adequate proficiency in English. At the second stage, the translated EBPQ was evaluated by a nurse manager, a researcher with health expertise in a government office, and a medical education professional to confirm its content validity. Consequently, the questionnaire underwent back translation to English language by an independent translator who did not know the questionnaire. Thereafter, the EBP authors were consulted regarding the back-translated EBPQ. It was then pretested with two nurses at the third stage. The content for the questionnaire was then finalized.

Validity and reliability of the evidence-based practice questionnaire

The EBPQ was evaluated using several processes. Its content was validated and its reliability was measured against internal consistency using SPSS®. The EBPQ validation was determined by correlating the single items in each subscale with the total subscale score and by comparing the individual item scores with the total subscale scores. The reliability score was measured by the consistency of each item in the subscale and in total. Reliability testing was performed on 42 bachelor degree nurses and diploma three

nurses at five hospitals in Depok and Jakarta. Inter-rater reliability tests were performed to assess the consistency of the questionnaire when utilized by researchers and enumerators. The tests were administered at two hospitals and a primary healthcare center (Puskesmas) in Depok with the participation of nurses and doctors.

RESULTS
Translation of the evidence-based practice questionnaire
Table 1 presents the final Indonesian version of EBPQ. Several changes to words were effected in the second step of the translation process. Three items were impacted by cultural differences. "Evidence" was changed to "scientific evidence" and "IT" skills was changed to "information technology" skills. One item was modified to better exemplify Indonesian culture: "I welcome questions about my practice" was changed to "I welcome criticism of or questions about my practice." Consensus was reached by three healthcare and education professionals over the word usage.

The Bahasa Indonesia EBPQ version was then translated back into English and compared against the original version. Following the backward translation process, discrepancies were identified in relation to five items, namely "evaluate the outcomes of your practices," "My practice has changed because of evidence I have found," "awareness of major information types and sources," "knowledge of how to retrieve evidence," "the ability to critically analyze the evidence against set standards," and the "ability to apply information to individual cases."

Pre-testing and carrying out cognitive interviews to determine the subjects' understanding of the statements in the questionnaire and identify any difficulties in interpreting the statements comprised the third step. Pre-testing was conducted by two nurses with a tertiary education (i.e., a Bachelor's degree) and one nurse with a diploma. They suggested the word literature to be added to the word scientific evidence. There is no other difficulty in understanding the questionnaire.

Further steps were taken to finalize the questionnaire content. Item number 2 in the practice subscale was changed from "track down the relevant evidence once you have formulated the question" to "search for the relevant literature or scientific evidence after formulating the question." Item number 3 was changed from "critically appraise, against set criteria, any literature you have discovered" to "critically assess any literature or scientific evidence that you have found in accordance with certain criteria." Item number 4 was changed from "integrate the evidence you have found with your expertise" to "integrate the literature/scientific evidence that you've found with your expertise." Item number 5 was changed from "evaluate the outcomes of your practice" to "evaluate the results of the health intervention or services that you provided."

Item number 1 in the attitudes-based subscale was changed from "My workload is too great for me to keep up to date with all the new evidence" to "My workload is too heavy for me to know all the new literature." Item number 2 was changed from "My practice changed because of evidence I found" to "My clinical practice changed because of the new science I read or learned." Item number 6 was changed from "I welcome questions about my practice" to "I accept criticism of or questions about my clinical practice."

Item number 2 in the knowledge subscale was changed from "IT" skills to "information technology" skills. Item number 5 was changed from "awareness of major information types and sources" to "knowledge about types and sources of information."

Item number 7 was changed from "knowledge of how to retrieve evidence" to "knowledge of how to identify scientific articles." Item number 8 was changed from "ability to critically analyze the evidence against set standards" to the "ability to critically compare the scientific literature or evidence against existing standards." Item number 11 was changed from the "ability to apply information to individual cases" to the "ability to apply the knowledge in each case."

Praktik

Berdasarkan pengalaman Anda dalam merawat pasien selama satu tahun terakhir, seberapa sering Anda melakukan hal berikut jika Anda mengalami kesulitan/menemukan hal yang belum pernah Anda ketahui dalam praktik Anda (beri tanda ✓ atau X):

	Tidak pernah						Sering
1. Merumuskan pertanyaan untuk menjawab ketidaktahuan Anda	1	2	3	4	5	6	7
2. Mencari literatur/bukti ilmiah yang relevan setelah merumuskan pertanyaan	1	2	3	4	5	6	7
3. Menilai secara kritis setiap literatur/bukti ilmiah yang Anda temukan sesuai dengan kriteria tertentu	1	2	3	4	5	6	7
4. Mengintegrasikan literatur /bukti ilmiah yang Anda temukan dengan keahlian Anda	1	2	3	4	5	6	7
5. Mengevaluasi hasil intervensi/ pelayanan kesehatan yang Anda berikan	1	2	3	4	5	6	7
6. Membagikan informasi ini dengan rekan kerja	1	2	3	4	5	6	7

Sikap

Beri tanda ✓ atau X pada skala pernyataan yang sesuai dengan diri Anda pada pasangan pernyataan dibawah ini:

1. Beban kerja saya terlalu berat untuk dapat mengetahui semua bukti ilmiah baru	1	2	3	4	5	6	7	Bukti ilmiah baru sangat penting sehingga saya menjadwalkan kegiatan mencari bukti ilmiah kedalam jadwal kerja saya
2. Saya keberatan jika praktik klinis saya dipertanyakan	1	2	3	4	5	6	7	Saya menerima kritik/ pertanyaan atas praktik klinis yang saya berikan
3. Praktik berdasarkan literatur/bukti ilmiah adalah suatu hal yang membuang waktu	1	2	3	4	5	6	7	Praktik berdasarkan literatur/ bukti ilmiah adalah dasar praktik yang profesional
4. Saya tetap menggunakan dan mempercayai metode yang sudah ada daripada beralih kepada sesuatu yang baru	1	2	3	4	5	6	7	Praktik saya telah berubah karena ilmu baru yang saya baca/pelajari

Pengetahuan

Pada skala 1 sampai 7 (7 adalah yang sangat baik), bagaimana Anda menilai diri Anda:

1. Keterampilan penelitian	1	2	3	4	5	6	7
2. Keterampilan teknologi informasi	1	2	3	4	5	6	7
3. Memantau dan mengevaluasi keterampilan praktik	1	2	3	4	5	6	7

		1	2	3	4	5	6	7
4.	Mengubah kebutuhan informasi Anda menjadi pertanyaan penelitian	1	2	3	4	5	6	7

Pengetahuan

Pada skala 1 sampai 7 (7 adalah yang sangat baik), bagaimana Anda menilai diri Anda:

		1	2	3	4	5	6	7
1.	Pengetahuan tentang jenis dan sumber informasi	1	2	3	4	5	6	7
2.	Kemampuan mengetahui kesenjangan antara praktik dengan ilmu dalam praktik profesional Anda	1	2	3	4	5	6	7
3.	Pengetahuan tentang bagaimana mendapatkan artikel ilmiah	1	2	3	4	5	6	7
4.	Kemampuan untuk membandingkan literatur/bukti ilmiah dengan standar yang ada secara kritis	1	2	3	4	5	6	7
5.	Kemampuan untuk menentukan seberapa valid (mendekati kebenaran) literatur/bukti ilmiah yang tersedia	1	2	3	4	5	6	7
6.	Kemampuan untuk menentukan seberapa berguna (dapat diterapkan secara klinis) literatur/bukti ilmiah yang tersedia	1	2	3	4	5	6	7
7.	Kemampuan untuk menerapkan ilmu pada masing- masing kasus	1	2	3	4	5	6	7
8.	Berbagi ide dan ilmu dengan rekan kerja	1	2	3	4	5	6	7
9.	Menyebarluaskan ide baru terkait perawatan kepada rekan kerja	1	2	3	4	5	6	7
10.	Kemampuan untuk mengevaluasi praktik klinis Anda	1	2	3	4	5	6	7

Table 1: The Indonesian version of the evidence-based practice questionnaire originally proposed by Upton and Upton (2006). The English version can be retrieved from http://ebpq.co.uk/

Validity
All 24 items are valid with Pearson correlation scores ranging between 0.451 and 0.875.

Reliability
Internal consistency
The average inter-correlation among the items was shown to be $\alpha = 0.956$, with scores of $\alpha = 0.92$, $\alpha = 0.80$, and $\alpha = 0.96$ for practice, attitudes, and knowledge, respectively.
Inter-rater reliability
The Indonesian version of the EBPQ was tested with five nurses and a doctor. The participants were asked about their understanding of the instrument. All of the participants were able to comprehend the questionnaire.

DISCUSSION
Following testing, the internal reliability of the Indonesian version of the EBPQ was found to be congruent with that described in other studies. High reliability (Cronbach's $\alpha = 0.956$) was reported for all the items, higher than that obtained using the original EBPQ proposed by Upton and Upton (2006) (i.e., $\alpha = 0.87$) . It was also slightly higher than that reported in other studies by Ammouri et al. (2014); Zhou et al. (2016) ($\alpha = 0.91$ and $\alpha = 0.88$, respectively).

Nonetheless, it was with the study by AbuRuz et al. (2017) (α = 0.96).

The internal reliability scores for each subscale in the present study also corresponded with those described in other studies. Scores for the practice, attitudes, and knowledge subscales of the Indonesian, Upton and Upton (2006), and Ammouri et al. (2014) versions were α = 0.80–0.85, α = 0.74–0.79, and α = 0.91–0.94, respectively. A similar value was reported in the study by Zhou et al. (2016) (α = 0.80–0.91). A lower knowledge and attitude subscale score (α = 0.87 and 0.68, respectively), was reported in research by Shafiei, Baratimarnani, Goharinezhad, Kalhor, and Azmal (2014).

Although there was a slight difference between the EBPQ results obtained in the study by Shafiei et al. (2014), the internal consistency reliability of the overall scores was demonstrated in all the studies, as were similarities between the subscales scores. In particular, the attitude subscale scores obtained using the Indonesian version and others in the aforementioned studies were consistently lower than those obtained for the practice and knowledge subscales. This implies that the all items listed in the Indonesian version were similarly reliable to those utilized in previous studies.

Internal consistency was high in the current study. Acceptable Cronbach α values have been demonstrated to range from 0.70–0.95 (Bland & Altman, 1997; DeVellis, 2003; Nunnally & Bernstein, 1978). However, Streiner (2003) argued that the maximum possible value in this regard was 0.90. He advocates that a value that is ≥ 0.90 suggests the redundancy of items. The total score obtained using the Indonesian EBPQ exceeded this limit but this was expected as several of the items were duplicated in the practice and knowledge statements. Furthermore, the Indonesian version of the EBPQ was understood by the participants following an evaluation of inter-rater agreement. Therefore, the Indonesian version of the EBPQ can be considered to be reliable. This Indonesian EBPQ is available at the evidence-based practice questionnaire website (Upton et al., 2017).

CONCLUSION

The EBPQ proposed by Upton and Upton (2006) was translated into Bahasa Indonesia and was subsequently evaluated for validity and reliability. Further studies on the perceptions of healthcare workers. The current study findings suggest that the Indonesian version of the selected EBPQ is reliable. It is recommended that the knowledge of, attitudes toward, and practices of doctors and nurses in relation to EBPs should be determined in future research.

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