PRELIMINARY DEVELOPMENT OF NURSES' PRACTICE OF PEACEFUL END-OF-LIFE CARE INSTRUMENT (NP-PECI)

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Abstract

Peaceful dying process is considered as an important outcome of high-quality of palliative care and end-of-life care. To meet the patients' needs of peaceful end of life, appropriate nurses' practice of peaceful end-of-life care is demanded. However, no specific instrument was found to assess nurses' practice of peaceful end-of-life care. This paper aims to report a preliminary development of an instrument to measure practice of peaceful end-of-life care among nurses. Theory of Peaceful End of Life developed by Ruland and Moore was employed as a framework in initial creating 30 item questionnaires of Nurses' Practice of Peaceful End of Life Instrument (NP-PECI) in English language. The steps of validating contents of questionnaires were followed. Three experts in this area were reviewed and gave comments on each item. Content Validity Index (CVI) was evaluated and its average value was 0.94. Some unclear language items were revised. A pilot study in 60 Chinese nurses in a community hospital was done during March, 2021. The reliability of the NP-PECI was measured by using internal consistence reliability in which Cronbach's alpha was 0.973. The result of this pilot study showed that the NP-PECI with 30 items was valid and reliable. However, rigorous evaluation of psychometric properties of this instrument will be recommended in a large sample size.

Keywords: **Preliminary development, Instrument, Nurses, Peaceful end-of-life care**

Introduction

Most people wish to have a peaceful and pain-free death at the end of life (Fleming *et al*., 2016). Peaceful dying process is considered as an important outcome of high-quality of palliative care (Hartogh, 2017). However, to meet the patients' wishes of peaceful end of life, appropriate nurses' practices of peaceful end-of-life care is necessitated. Peaceful end-of-life care focused toward optimizing quality of life and minimizing symptoms for the dying rather than trying to cure a disease (Ruland and Moore, 1998). In nursing science, the 'Peaceful End of Life Theory' of Ruland and Moore (1998) is an important reference due to the similarity of its concepts and assumptions to the principles of palliative care (Zaccara *et al.,* 2020).

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The Theory of Peaceful End of Life (PELT) was developed by Ruland and Moore (1998), which included five sub-concepts of not being in pain, experience of comfort, experience of dignity/ respect, being at peace, and closeness to significant others/who care. This theory provided suitable and holistic nursing practice guidance for nurses to promote patients' peaceful end of life or peaceful dying process and a peaceful death (Ruland and Moore, 1998). The details were provided in Figure 1.

Among the health professionals, knowledgeable nurses take a crucial role in palliative care provision (Sekse *et al*., 2017; Zheng *et al*., 2021). As care quality has become the main issue in healthcare setting, competent nurses described strong ambitions to provide high-quality care, and they emphasized the importance of maintaining terminal ill persons' hopes in the death-denying cultural context (Dong *et al*., 2016). To provide palliative care and facilitate good death for dying persons, they are also supposed to possess a set of various competencies to deliver high-quality palliative care (Zheng *et al*., 2021). However, they found it uncomfortable or difficult to evaluate patients on palliative care and initiate peaceful services in such a cultural context (Huang and Niu, 2020; Tam *et al*., 2021). Therefore, choosing self-evaluation can be suitable, as well as allow them to clearly understand their own abilities.

Until now, although some tools are available to measure nurses' palliative care, such as 1) The Nurse's Caring Behavior for Dying Patients Questionnaire (NCDQ) Prompahakul *et al*., 2011); 2) Palliative Care Quiz for Nursing (PCQN) (Kassa *et al*., 2014); 3) The nurse-QOD-1 (Brinkman-Stoppelenburg *et al*., 2018); 4) KAP-PCCSI (Pan *et al.,* 2017); 5) A questionnaire with Likert scales (DeVon *et al*., 2007); 6) The Palliative Care Survey (PCS) (Morell *et al*., 2021), no specific tool was found to examine nurses' practice of peaceful end-of-life care based on the Theory of Peaceful End of Life.

Therefore, this study focused on developing a tool to evaluate nurses' practice of peaceful end-of-life care. The Theory of Peaceful End of Life was utilized as a fitting framework. It was based on evidence from first-hand experiences of specialized nurses and literature review about elements of the theory, which consisted of best practices derived from research in the fields of pain management, comfort, nutrition, and relaxation etc. (Ruland and Moore, 1998). By being conscious of this theory, nurses can gain explicit hypotheses from relational statements to test usefulness and to better guide nurses' practice, and that they can use the Theory of Peaceful End of Life to provide better delivery of palliative and end-of-life care to patients and their relatives (Zaccara *et al.,* 2017)

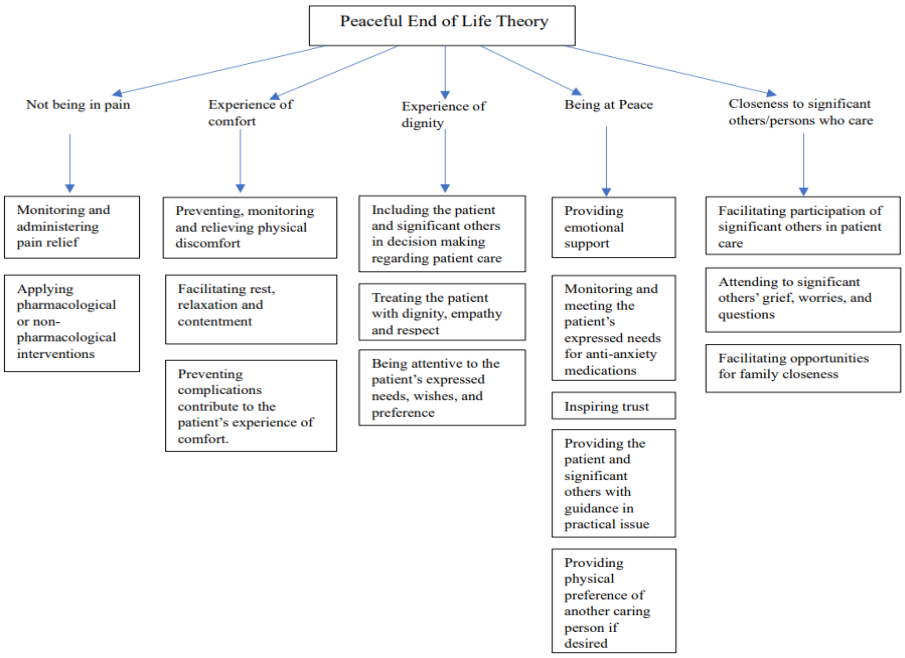

Figure 1. Five domains and their sub-domains of the Theory of Peaceful End of Life developed by Ruland and Moore in 1998

Research Method and Results

The study was developed by 7-step process: specify domain of construct, production of items, collect data, pre-testing the instrument for clarity, test of validity, data collection again and test of reliability, and develop standards (Churchill, 1979).

Step 1: Specify domain of construct

Nurses' Practice of Peaceful End of Life Instrument (NP-PECI) was developed by the researchers to assesses nurses' practice toward peaceful end-of-life care. According to the framework of Theory of Peaceful End of Life, there are five and the following sub-concepts: 1) Pain-free: nurses examine and manage pain relief by applying non-pharmacological and pharmacological interventions to enhance the pain-free experience of patients; 2) Comfort experience: including prevention, monitoring and mitigation of physical discomfort, relaxation, promotion of rest, satisfaction and avoidance of complications; 3) Dignity/respect experience: this is enhanced by including patients and significant relatives in the management of the patient, caring for the patient with compassion, dignity, respect, and paying attention to the preferences, wishes, and needs expressed by the patient; 4) Peace: it's all about psychological support, monitoring and responding to patients' wishes for anti-anxiety medication, coaching patients and relatives on practical issues, including guardian presence when needed, and inspiring trust; 5) Intimacy with significant others: enhancing by significant relatives' involvement in inpatient care, caring for relatives' concerns, grief and inquiries, and facilitating opportunities to stay with close family members (Ruland and Moore, 1998).

Step 2: Production of items

Styles of questionnaires can be structured, semi-structured or unstructured, and items can also be closed or open (Khatiwada *et al*., 2015). This study used a structured questionnaire with closed questions. All items of the evaluation dimension used the Likert 5-point scale, from never practicing to always practicing. The meaning of each number was 0= never practice; 1= rarely practice; 2= occasionally practice; 3= usually practice; 4= always practice. In order to realize the effectiveness of the content of the tool, researchers have extensively searched the literature on concepts related to the implementation of palliative care and hospice care from theories, previous tools, models, and past research results, plus based on the contents of five domain that belongs to the Peaceful End of Life Theory. The questionnaire items were developed by using common sense semantics guidelines which include (1) striving for clarity; and (2) avoiding emotionally-laden words, ambiguity, and wording that prompts the interviewee to give specific answers (Waltz *et al*., 1991). The tool was initially developed as: Not being in pain 7-items; Being at peace 6-items; Experience of comfort 5-items; Experience of Dignity/respect 6-items; Closeness to significant others/who care 3-items. There were a total 27 questions.

Step 3: Data collection

In order to pre-test the clarity of the instrument, the researchers solicited a simple random sample of 30 nurses to complete the instrumentation in the research environment. Participants were asked to complete the instrument as instructed by the question. No additional verbal guidance was provided. The time required to complete was 10 minutes. When all participants finished, they were asked to comment on the wording, timing, and their understanding of the project. They were also asked to make suggestions on what they think was more appropriate. The nurses reported that there was no difficult to participate.

Step 4: Pre-testing the instrument for clarity

A panel of three experts convened for this purpose. The four attributes (a-d) of questions and answers scored on a 4-point scale (1 = irrelevant/ unclear/incomplete/meaningless; 4 = highly relevant/clear/complete/meaningful) (Halek *et al*., 2017; Boateng *et al*., 2018). In addition, experts in the field also assessed whether these projects covered all important aspects or missed components. Experts also commented on each item. Two experts in end-of-life care are nursing professors from two Faculty of Nursing, Prince of Songkla University and Faculty of Nursing, Thammasat University respectively, Thailand, and the other expert is an academic nurse from Yunnan Cancer Hospital with experience and expertise in the clinical practice of palliative and end-of-life care. The experts accessed the contents to determine whether the items were accurate, appropriate and congruent.

Some of the items needed to minor modifications. which was completed as suggested by the experts. Twenty-two items were retained that had a CVI of 1.00 (all three experts gave these items a rating of 3 or 4, relevant), five items (item 5, 18, 21, 24, 25) were rated 1 or 2 by an expert. According to the opinions of three experts and the context of China, these five items have not been deleted,

instead, these items were revised to relevant items. At the same time, experts suggested to add three more items in subscale of "Closeness to significant others/who care" to gain high reliability of the tool.

The final 30 items represented the dimensions as follows: Not being in pain 7-items; Being at peace 6-items; Experience of comfort 5-items; Experience of Dignity/respect 6-items; Closeness to significant others/who care 6-items.

Step 5: Assess the validity of Nurses' Practice of Peaceful End-of-Life Care (NP-PECI)

The 30 items were submitted to the three experts again, all 30 items were kept. The content validity index (CVI) value of NP-PECI is 0.94; this is considered as an acceptance value (> 8) (Polit and Beck, 2017).

Besides validity research is used to analyze whether the research item is reasonable and meaningful. A factor analysis was considered as a data analysis method to conduct in this research. Comprehensive analysis was carried out through Kaiser-Meyer-Olkin (KMO) value, communality value, variance interpretation rate, factor loading coefficient value and other indicators to verify the validity level of the data. KMO value was used to judge the suitability of information extraction, communality value was used to exclude unreasonable research items, variance interpretation rate was used to illustrate the level of information extraction, the factor loading coefficient was used to measure the corresponding relationship between factors (dimensions) and item. It can be seen from the Table 1: 1) communality value corresponding to all research items are higher than 0.4, which explains that the research item information can be effectively extracted; 2) the interpretation rate of the 6 factors is 20.067%, 18.654%, 14.825%, 11.646%, 8.639%, 6.022% respectively, cumulative variance explained rate after rotation is 79.853%>50%, it means that the amount of information of the research item can be effectively extracted; 3) validation is performed using KMO and Bartlett's test. Table 1 describes the validity analysis passed the Bartlett's test, the corresponding p value is 0.000 and less than 0.05, the KMO value is 0.850, and greater than 0.8, which identifies that the data is very suitable for extracting information (the validity of the response from the side is very good).

Step 6: Data collection again and assess the reliability of Nurses' Practice of Peaceful End-of-Life Care (NP-PECI)

The NP- PECI was translated into Chinese using the back-translation method (Brislin, 1970). Statistical software (SPSS Statistics, version 23.0; SPSS, Inc., Chicago, IL, USA) was used for statistical data processing.

A pilot study was conducted in community hospitals of a city, Guizhou Province in China. The data collection process was made in March 2021. To protect the participants' rights and maintain confidentiality of all the subjects, the researchers got permission from the Institutional Review Board (IRB), Faculty of Nursing, Prince University of Songkla University (No. 2021- St- Nur- 001) and research setting. Sixty nurses were recruited using the simple random sampling. Kolmogorov-Smirnov and Shapiro-Wilk (α>0.05), Histogram and linearity testing (P-P plot) showed that this variable met the normality assumption. the Cronbach's alpha coefficient of the NP-PECI is 0.973. The Cronbach's alpha coefficient of each subscale in the NP-PECI was provided in Table 2. The value of two items (item 12 and 13) "You prevent complications such as pressure sores and wound infections that would occur to patients near the end of life" and "You take cultural background and religious customs of patients near the end of life into account of your nursing care" among questionnaire was less than 0.5.

Step 7: Develop standards

There is a total of 30 items in the NP-PECI. The answer scale is categorized into five levels as follows: 0= never practice means you think that statement never happens in your own nursing practice; 1= rarely practice means you think that statement is rare happens in your own nursing practice (about 20% of the time); 2= sometimes practice means you think that statement happens in your own nursing practice sometimes (less than half of the time <50%); 3= usually practice means you think that statement often happens in your own nursing practice (more than half of the time >50%); 4= always practice means you think that statement happens in your work all the time (more than 80 percent of the time >80%). The summed score ranged from 0 to 120. A higher score pointed to a higher practice level. The score is interpreted using the formula of grouped frequency distribution (max-min/number of category) (Grove and Gray, 2018). Therefore, the level of peaceful end-of-life care in this study is categorized as: Low level 0-40; Moderate level 41-80; High level 81-120.

Discussion

No instrument or tool has been yet developed to measure the concepts of the Peaceful End of Life Theory (Ngabonziza *et al.*, 2021) and nurses'

practice of peaceful end-of-life care. Evaluation is a key part of nursing. If nurses want to improve their level of practice, the interaction between assessment and practice is very important. Tools are one of the main elements that contribute to this. This study focused on the development the NP-PECI that is a new tool to measure the practice of nurses in the implementation of peaceful end-of-life care. The Peaceful End of Life Theory and a comprehensive literature review were the foundation of constructing NP-PECI. According to (Ghazali, 2016), it is important to present the reliability and validity of the questionnaire so that other researchers can have confidence in the quality of the data they will obtain in the future. In this study, Cronbach's alpha coeffcient, exploratory factor analysis, the simple sampling of nurses and academic faculty experts review not only helped to ensure face satisfying validity and reliability but was valuable in further refining the instrument. Meanwhile, no matter whether it is the Chinese version or the English version, NP-PECI is the first instrument to evaluate nurses' practice of peaceful end-of-life care based on the theorical framework of Peaceful End of Life Theory. Furthermore, NP-PECI has a high degree structure with response alternatives construction as a 5-Likert scale. These kinds of scales often have odd numbers of alternatives so that researchers can measure the direction and intensity of an individual's practice. Besides the response rate was 100%, the respondents' demographic characteristics were almost identical in terms of age, gender, and number of years of nursing experience with the total population of China RNs, this strengthens the generalizability of the results. Therefore, it provided enough information about the validity of the content.

Self-evaluation is the way in which individuals reflect on past experiences and events to facilitate learning, development and retention of skills and knowledge to assess whether an individual's abilities are in compliance with the relevant professional code of conduct (Andrade, 2019). Models of the self-assessment process in the literature also use the term "reflection" to describe this activity, with the self-assessment/reflection approach seen as involving "returning to the experience, describing it and paying attention to thoughts and feelings". (Platzer *et al*., 2011) Especially for nursing and other health care professionals, self-assessment is a medium through which theory can be assessed in practice and their personal knowledge resources can be used and embedded in clinical practice and expertise of experts. (Tzeng, 2004).

Self-evaluation is increasingly being incorporated into nurses' study programs and is being pursued throughout their careers for continued professional development, as such, self-assessments of one's own abilities are primarily described in a positive light with an emphasis on relevant strengths (Andrade, 2019). One of the main benefits of mixing self-assessment into professional development is the way which can not only translate theory and learning into methods more suitable for application by increasing the relevance of theories, but also help nurses to apply their learning by assessing them in the context of their own experience (Wrenn and Wrenn, 2009). Self-assessment and reflection can also promote nurses to develop this initial knowledge basically by incorporating future experiences so as to expand personal knowledge resources for continued professional development.

However, there are some limitations that should be considered when using self-assessment. The depth of assessment and the use of reflection will depend on the degree to which individuals value their knowledge and ability to assess. It has been reported that many nurses do not value their own personal knowledge in favor of only research-based knowledge, thus underutilizing their own resources (Platzer *et al*., 2011), and thus may not value their self-learning process or efforts subsequently. Assessment means that learning outcomes will be limited.

In conclusion, the results provided preliminary support for psychometric properties focused on the validity and reliability of the Nurse' Practice of Peaceful End-of-Life Care Instrument. Further development of this instrument is recommended in a large sample. A test-retest design of NP-PECI will also be conducted in the future.

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