ORIGINAL ARTICLE

Indonesian Version of Pediatric Nursing Student Clinical Comfort and Worry Assessment Tool: Validity and Reliability

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ABSTRACT

Introduction: Nursing students may experience psychological problems while undergoing clinical practice in a pediatric setting which can affect the achievement of learning outcomes. The purpose of this study was to evaluate the validity and reliability of the Pediatric Nursing Student Clinical Comfort and Worry Assessment Tool (PNSCCWAT) in Indonesian Version. **Methods:** This study used a cross-sectional design. The adaptation process was conducted by applying the forward and back translation method, the content validity was assessed by five experts. The psychometric testing was performed using exploratory factor analysis and Cronbach's alpha coefficient on a sample of 213 nursing students who underwent clinical practice in a pediatric setting. **Results:** The results of the content validity test of the instrument adapted into Indonesian obtained an I-CVI and CVR values of one for each item. The results of factor analysis with PCA obtained two factors that were extracted, similar to previous studies. These factors can explain 48.015% of the total variance of the instrument. All of these factors are considered internally consistent with Cronbach's Alpha value of 0.796. **Conclusion:** This Indonesian version of the instrument is useful for evaluating the comfort and concern of pediatric nursing students in Indonesia. Thus, the use of this instrument can contribute to improving nursing education by focusing teaching efforts on the things that pediatric nursing students most concern and worry about.

Keywords: Adaptation, Pediatric nursing, Psychometrics, Students

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INTRODUCTION

According to the World Health Organization in 2020, approximately 59% of the health professions are nurses, therefore nursing is one of the largest occupational categories in the world in the health sector (1). Nursing education combines theory, laboratory practicum, and clinical practice (2). Each stage of learning should be performed properly by nursing students to be able to achieve the expected competencies. In Indonesia, professional nursing education is held after completing the undergraduate nursing education program which aims to prepare students to be able to perform their functions and roles as nurses by practicing in various settings, one of which is the practice of pediatric nursing (3).

Experiencing clinical practice and dealing directly with patients might affect the psychological status of students. For example, one study stated that students feel anxious before clinical practice but are also enthusiastic about it (4). Another study also noted that nursing students experience high levels of stress in a clinical environment (5).

One of the reasons why students have to face feelings of anxiety, worry, and fear is because they will experience rotation in different settings (4,6). A study in Greece stated that nursing students had a positive perception of the clinical learning environment in children's hospitals (2). However, Al-Qaaydeh et al. (2012), mentioned that in several studies, nursing students experience more stress and anxiety when undergoing clinical practice in a pediatric setting, because it is related to children as a vulnerable population in receiving nursing interventions, students are also easily carried away by feelings of sadness and helplessness faced by children, as well as difficulties in approaching children and their families (7,8).

The learning process during clinical practice can be hampered if students experience stress. Therefore, students must anticipate to prepare themselves for situations that can cause stress (9). Stress experienced by students has been identified as an essential psychosocial factor in the educational process and can affect student well-being (6). In addition, the fear and anxiety

experienced by students can interfere with the learning process and reduce the achievement of student's clinical competence (10).

Clinical practice provides a different experience for nursing students. The knowledge gained during clinical practice is expected to shape nursing students to be competent. Students might comprehend the role of nurses when undergoing clinical practice, and the psychological response of students is to feel enthusiastic about undergoing clinical learning, but students might also experience anxiety (4).

Therefore, it is essential to examine the psychosocial problems experienced by students during clinical practice in practice settings that can trigger an increase in student psychosocial problems. Currently, there is a questionnaire as an assessment tool that explicitly examines the comfort and concern of pediatric nursing students developed by Al-Qaaydeh et al. (2012), namely the Pediatric Nursing Student Clinical Comfort and Worry Assessment Tool (PNSCCWAT). This survey instrument was designed to evaluate the comfort and concern of students prior to and after undergoing pediatric nursing practice. In addition, this assessment tool was created to identify specific problems expressed by students during the pediatric nursing rotations (7).

This instrument has never been used in Indonesia, and there is no specific instrument in Indonesia to evaluate the psychological condition of nursing students who practice in pediatric settings. Therefore, this study aims to evaluate the validity and reliability of the Indonesian version of the PNSCCWAT instrument.

MATERIALS AND METHODS

Study design

This study is a validity and reliability study with a cross-sectional design.

Participant and setting

The population in this study were all nursing students of the Faculty of Nursing, Universitas Padjadjaran who were undergoing and had experienced clinical practice in a pediatric setting, as many as 228 students. To be able to test the validity and reliability of an instrument, Streiner et al. (2015) recommends a minimum of five respondents per item of the instrument, since the number of statement items on the instrument was 11 items. The sampling technique in this research used total sampling, the number of samples in the study was 213 respondents (93.4 percent participation rate). This research was conducted at the Faculty of Nursing Unpad from July 2020 to June 2021.

Ethical considerations

The research obtained ethical approval from the research ethics committee of Universitas Padjadjaran with number 780/UN6.KEP/EC/2020 and obtained permission from the research setting. In performing the study, researchers conform and consider the ethical principles of research by fulfilling The Five Rights of Human Subjects in Research, including respect for autonomy, privacy or dignity, confidentiality, justice, and beneficence (11).

Data collection

Data collection was carried out after obtaining ethical approval from the Health Research Ethics Committee Universitas Padjadjaran, and also permission from the Professional Study Program of the Faculty of Nursing, Universitas Padjadjaran. Related to the pandemic situation, researchers collected data using Google Forms. Initially, the researchers asked for the contact number of the students who were undergoing clinical practice. Then the researcher explained to the prospective respondents via WhatsApp regarding the research and the instruments that would be filled out by the prospective respondents. After the prospective respondent comprehended the purpose of the study and confirmed that they were willing to participate, the researcher provided the link.

Data Analysis

The original PNSCCWAT instrument in English was adapted into Indonesian with a systematic translation process by applying forward and back translation (12–15). The translation of the instrument into Indonesian involved a linguist who was a native Indonesian speaker and fluent in English, and a translator who had knowledge of health terminology. They worked independently. The translation results were then compared and compiled by the research team for further blind back-translation by translators with the same characteristics as the forward translation stage, and the new English version was compared with the original English version by the research team and a linguist to assess language consistency.

The results of the instrument adaptation were then reviewed by five experts in the field of nursing related to the instrument, specifically psychiatric nursing experts, pediatric nursing experts, fundamental nursing experts, and two clinical instructor nurses in the pediatric ward. The experts review the instrument in light of the local context and culture in which it will be applied. Furthermore, the instrument was tested for content validity index (CVI) to assess content equivalence (content-related validity) (14). The experts also tested the content validity ratio (CVR). The CVR value was used to determine how many panel members needed to agree on an essential item. Thus, in order to determine which items should be included or excluded from the final instrument and to correctly insert or remove items from a particular instrument, the CVR value must be accurate (16).

Validity and reliability test as the process of psychometric testing was conducted using Principal Component Analysis (PCA), and Cronbach's alpha coefficient was used to measure the internal consistency of the instrument (11).

RESULTS

Adaptation of the instrument into Indonesian

There was no significant difficulty in the process of adapting the PNSCCWAT instrument because the terms used were obvious and relatively simple. There were some differences in the choice of words by the translator. However, they still followed the rules of the Indonesian language and still had the same meaning so that the research team and linguists discussed to choose which one was the most appropriate and in accordance with the original version when retranslated. The results of the instrument adaptation are in Table I.

Content Validity Test

The CVI is considered from each item (I-CVI) and the scale of the CVI (S-CVI). I-CVI is calculated based on the experts who give three or four on each item, then divided by the total number of experts (17). Meanwhile, the S-CVI is the average of the I-CVI scores (19). The experts were asked to evaluate each item of equity instruments for content (relevance) (content-related validity [relevance]) using the following scale: 1 = not relevant; 2 = less relevant items; 3 = item is quite relevant; 4 = very relevant (20). The I-CVI and S-CVI values of this instrument are 1, as shown in Table II (17,18).

The CVR assessment is a linear transformation of the proportional level of agreement about how many "experts" in the panel rated an item "important" or essential calculated by using the formula:

$$CVR = \frac{n_e - (N/2)}{N/2}$$

According to Lawshe, n_e is the number of panel members indicating "important" items, and N is the number of panel members (16). The results of the CVR assessment on all items in the instrument that have been adapted into Indonesian are 1, as shown in Table III.

Table I: Indonesian Version of PNSCCWAT

Tingkat Kenyamanan dengan Lingkungan Situasi Klinis Pediatrik	
1.	Saya merasa nyaman saat melakukan pengkajian pada anak
2.	Saya merasa nyaman saat menjelaskan prosedur tindakan/pengobatan/ terapi kepada anak dan atau keluarganya
3.	Saya merasa tidak nyaman saat memberikan obat-obatan kepada anak.
4.	Saya merasa nyaman saat memberikan terapi atau melakukan prosedur tindakan terhadap anak.
5.	Saya merasa tidak nyaman saat membantu/mendampingi anak dan keluarganya saat menjalani prosedur yang menyakitkan
6.	Saya merasa nyaman saat memberikan dukungan kepada anak dan keluarganya pada saat-saat krisis dan duka.
Kekhawatiran akan Rotasi Klinis	
7.	Saya khawatir jika harus merawat anak yang sakit
8.	Saya khawatir akan menyebabkan bahaya fisik kepada anak selama menjalani praktik di area keperawatan anak.
9.	Saya khawatir akan menyebabkan masalah emosional kepada anak selama praktik di area keperawatan anak.
10.	Saya khawatir akan menyebabkan nyeri pada anak selama praktik di area keperawatan anak.
11.	Saya khawatir jika harus berinteraksi dengan keluarga dari anak yang sakit.

Table II: Result of CVI

	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	I-CVI
Q1	4	4	4	4	4	1
Q2	4	4	4	3	4	1
Q3	4	4	4	4	4	1
Q4	4	4	4	4	4	1
Q5	4	4	4	3	4	1
Q6	4	4	4	4	4	1
Q7	4	4	4	4	4	1
Q8	4	4	4	4	4	1
Q9	4	4	4	4	3	1
Q10	4	4	4	4	4	1
Q11	4	4	4	4	4	1
					S-CVI	1

Table III: Result of CVR

	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	I-CVI
Q1	3	3	3	3	3	1
Q2	3	3	3	3	3	1
Q3	3	3	3	3	3	1
Q4	3	3	3	3	3	1
Q5	3	3	3	3	3	1
Q6	3	3	3	3	3	1
Q7	3	3	3	3	3	1
Q8	3	3	3	3	3	1
Q9	3	3	3	3	3	1
Q10	3	3	3	3	3	1
Q11	3	3	3	3	3	1

Demographic Data

A total of 213 respondents were in the age range of 21-25 years and most of them were women (81.7%).

Construct Validity Test

Table IV presents the results obtained from measuring sample adequacy according to Kaiser- Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. The KMO value obtained from data collected from 213 participants is 0,786. This value indicates that this instrument has surpassed the minimum requirement of at least 0.6 on an excellent factor analysis result (21). Moreover, the table also shows that the value p- for the instrument's results on the Bartlett test is 0.001, which indicates that the instrument meets the requirements of the Bartlett test, which must have a significant value of $p < 0.05$ that factor analysis is considered appropriate.

The data results in Table V show that two components

Table IV: Measurement of Kaiser-Meyer – Olkin (KMO) for Sampling Adequacy and Bartlett's Test Results (n=213)

Measurement results of Kaiser-Meyer – Olkin (KMO) for Sampling Adequacy		0.786
Bartlett's Test of Sphericity	Approx. Chi-Square	624,822
	Df	55
	Sig.	0.000

have eigenvalues greater than or equal to 1.00. This indicates that dividing the instrument into two elements is the most appropriate. So that in this instrument, there are two components or factors that can be extracted. When two factors were extracted, they could explain 48.015% of the total instrument variance.

Factor rotation facilitates further component interpretation. In Table VI, the rotated component matrix, which sorts the eleven question items into two overlapping groups with the value of each loading factor more than equal to 0.4.

Reliability Test

Table VII shows that the results of the reliability test on all items in the PNSCCWAT instrument that have been adapted into Indonesian have a Cronbach's Alpha value of 0.796. In addition, none of the items had a corrected item-total correlation score < 0.3, denoting that each item has a good correlation with the total score (19,20).

DISCUSSION

This study aims to adapt the PNSCCWAT into Indonesian language, as well as to evaluate the validity and reliability. There were no significant obstacles in the process of adapting the instrument into Indonesian despite the forward-back translation method. However, the translation results need to be discussed by the team because there are some differences in the choice of words, so it must be determined which words will be used to conform to the Indonesian sociocultural context

Table VI: Results of *Rotated Component Matrix*

	Component	
	1 Worry	2 Comfort
I am worried about causing physical harm to a child during this rotation (Q8)	.800	
Iam worried about causing a child pain during this rotation (Q10)	.791	
I am worried about causing emotional harm to a child during this rotation (Q9)	.699	
I am worried about caring for an ill child (Q7)	.569	
I am uncomfortable administering medications to a child (Q3)	.500	
I am uncomfortable helping children and their families cope during painful procedures (Q5)	.495	
I am worried about interacting with children s families (Q11)	.400	.326
I am comfortable explaining procedures/medications/therapies to a child (Q2)		.833
I am comfortable in performing a pediatric assessment (Q1)		.748
I am comfortable administering therapies or performing procedures on a child (Q4)		.706
I am comfortable in providing support to children and their families during times of crisis and grief (Q6)		.601

*Extraction Method: Principal Component Analysis.
*Rotation Method: Varimax with Kaiser Normalization.

Table VII: Results of Instrument Reliability Test for Pediatric Nursing Student Clinical Comfort and Worry Assessment Tool (PNSCCWAT)

Cronbach's Alpha	Items	Corrected item-total correlation	Cronbach's alpha if item deleted
0,796	Q1	0.414	0.785
	Q2	0.482	0.778
	Q3	0.396	0.786
	Q4	0.485	0.778
	Q5	0.443	0.782
	Q6	0.372	0.789
	Q7	0.507	0.775
	Q8	0.449	0.781
	Q9	0.550	0.769
	Q10	0.492	0.776
	Q11	0.411	0.785

Table V: Result of *Principal Component Analysis* (PCA)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.671	33.372	33.372	3.671	33.372	33.372	2.821	25.644	25.644
2	1.611	14.642	48.015	1.611	14.642	48.015	2.461	22.371	48.015
3	1.151	10.462	58.476						
4	.946	8.597	67.073						
5	.778	7.069	74.142						
6	.598	5.439	79.582						
7	.583	5.304	84.886						
8	.536	4.871	89.756						
9	.411	3.733	93.490						
10	.368	3.348	96.838						
11	.348	3.162	100.000						

*Extraction Method: Principal Component Analysis (PCA)

and their meanings and values. so it must be determined which words will be used to suit the socio-cultural context of Indonesia as well as its meaning and value. The words also have to remain in accordance with the original version of the instrument. Selecting the right words is an important thing to do in group discussions on the instrument adaptation process. Discussions are held to determine the best Indonesian translation by considering the similarities in semantics, grammar, and general usage in daily practice in the clinic (21).

The results of the CVI and CVR tests to the experts showed that the panel of experts reached a consensus that all items on the results of the instrument adaptation were valid for use. The I-CVI and S-CVI values of this instrument are indicating the items in this instrument are acceptable. If the number of experts who evaluate the instrument is five people, the acceptable CVI value is 1 (18). The result of the CVR on all items in the instrument also indicates that each item in the instrument is important. According to Lawshe, the acceptable CVR value is if the number of "experts" who conduct the assessment is 1 (16).

Factor analysis using PCA was performed to extract the factors. This technique is used to assess validity by examining the relationship between variables in the PNSCCWAT instrument, which has been adapted into Indonesian to identify the underlying structure of the variables. No items were deleted during the translation and psychometric validation process. Therefore, the number of factors is consistent with the validation study in the original English version. Two factors were extracted from the PCA in this study: the worry factor, which consisted of seven items, and the comfort factor, which consisted of four items. The adaptation of this instrument is also considered internally consistent because the instrument is declared reliable using Cronbach's Alpha if it has a result value of > 0.6 (11).
The two most significant and fundamental aspects in the evaluation of any measuring instruments or tool for a good quality of research are reliability and validity (22). The main purpose of a questionnaire in a study is to obtain relevant information in the most reliable and valid way (23). The adaptation of this instrument has shown acceptable validity and reliability, following previous studies. In addition, this instrument defines clinical comfort as knowledge, trust, and acquaintance with a specific clinical area and population due to experience or education in that area, and clinical comfort is crucial for new nurses to make clinical decisions and feel more confident. At the same time, worry is defined as excessive worry, anxiety, and thoughts about a distinctive course, environment, or other school-related problem (10).

The limitation of this study is that the study was conducted in a single one educational setting. Consequently, it might limit generalizability.

As for implications for practice, the Indonesian version of PNSCCWAT is useful to evaluate the comfort and worry of pediatric nursing students in Indonesia. Thus, the use of this instrument might contribute to improving nursing education by focusing on teaching efforts on the things that pediatric nursing students are most concerned and worry about.

CONCLUSION

The Indonesian version of PNSCCWAT instrument proved to be valid and reliable to be used in evaluating the comfort and worry of nursing students in Indonesia in undergoing pediatric nursing practice. Moreover, future research can use this instrument to identify factors related to matters of worry and concern of students in practicing in pediatric settings.

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