

# The Cultural Competency Scale for Clinical Pediatric Nurse (CCS-CPN) in Indonesia: Scale Development and Psychometric Evaluation

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**Keywords:** Culture Competency, Pediatric Nurse, Children.

**Abstract:** Nurses play an important role to apply practice in cultural competence in hospitals. To perform this role nurses need to provide information on the conceptual aspects of cultural competence by using instruments and assessing cultural competence in a clinical setting. Objectives of the study was to develop the cultural competency for clinical pediatric nurse (CCS-CPN) and psychometric evaluate the validity and reliability of CCS-CPN. Qualitative and quantitative methods were used to develop an instrument to measure nurse perceptions of cultural competency for clinical pediatric nurse. The data was examined using exploratory factor analysis (EFA) to identify the internal dimensions of the CCS-CPN. Using an EFA, 30-items with a six-factor structure were retained to form the CCS-CPN. The 30-item CCS-CPN yielded an overall Cronbach's alpha coefficients .85. and for subscales were .81, .73, .81, .75, .78 and .87, respectively. The 30-item CCS-CPN version of Indonesia consists of six factors: culture awareness of pediatric nurses (5 items), culture knowledge of pediatric nurses (6 items), culture skill of pediatric nurses (5 items), culture encounter of pediatric nurses (4 items), and culture sensitivity of pediatric nurses (7 items) were acceptable and significant. Unfortunately, factor 4 obtained an item that does not represent the dimensions of the culture encounter of pediatric nurses. Therefore, further research is needed by using different method of Delphi method.

## 1 BACKGROUND

Indonesian culture has been shaped by several factors namely indigenous customs and influenced by foreign cultures. Indonesia is centered along ancient trade routes between East, South Asia, and the Middle East, resulting in cultural practices strongly influenced by ethnic, religious, religious, and economic status as trading cities. The impact of a complex cultural blend shows different cultural results from the original. (Wikipedia, 2018). Culture therefore not only affects health practice but also how health care providers and patients feel the disease (Murphy, 2011). In practicing its profession, health professionals in Indonesia must have the ability to find diversity in the nurse-patient relationship. The ability to establish effective relationships with patients, other health professionals and others with different backgrounds is cultural competence.

Cultural competence is one of several aspects of professional health professionalism. In a clinical

setting cultural competence should focus on attitudes and behavioral changes to diversity. Nurses play an important role to apply practice in cultural competence in hospitals. To perform this role nurses need to provide information on the conceptual aspects of cultural competence by using instruments and assessing cultural competence in a clinical setting.

The lack of recognition of the crucial of cultural competence in nursing care ignores the important role nurses play in promoting patient well-being and maintaining a holistic approach to health (Lin, Mastel-Smith, Alfred, & Lin, 2015). Failure to provide culturally competent nursing care results in inaccurate application of nursing care to patients and non-adherence to care plans by individuals and their families (Van Ryn & Fu, 2003). Serent (2007) states that most nurses consider them culturally incompetent and thus have no ability to apply cultural competence which may place patients at risk of delayed treatment, improper diagnosis, non-adherence to treatment, and even death.

There is little literature available to identify and describe instruments that measure cultural competence in nursing (Loftin, Hartin, Branson, & Reyes, 2013). Cultural competence includes gender, sexual orientation, socioeconomic status, faith, profession, taste, disability, age, and race, and ethnicity. According to Campinha-Bacote (2002), cultural competence is a long-term process whereby nurses must continue to learn in improving the ability to work effectively in the context of patient culture. This process includes cultural desires, cultural awareness, cultural knowledge, cultural skills, and cultural gatherings. For someone who does not belong to a particular group, cultural diversity is increasingly diverse because of the diversity of ethnic backgrounds, languages, beliefs, and religions that have implications in the field of nursing. Although suitable health settings are increasingly representative of several different cultures, nurses feel their cultural competence is not optimal. Health settings become increasingly representative of several different cultures; nurses have limitations in the practice of cultural competence. Incorporating cultural competence in the curriculum of nursing education, organizational policy, and research will help prepare nurses to work within the practice of cultural competence (Magdalena, 2009).

Loftin, Hartin, Branson, and Reyes (2013) identified that tools for assessing cultural competence in nursing and nursing students are self-managed and based on individual perceptions. Such a tool is usually used to assess the effectiveness of educational programs designed in enhancing cultural competence. The tool reviewed measures self-perceptions of nurses or self-reported level of cultural competence but does not measure objectively for culturally competent nursing care from a patient's perspective that may be a problem (Loftin, Hartin, Branson, & Reyes, 2013). Therefore, an assessment framework for cultural competence should be performed by nurses with assessments that emphasize inclusion care with a holistic caring approach that includes the physical, psychological, social, and cultural needs of the patient. Shen (2015) reports that there are several models of cultural competence and cultural competence assessment tools developed, but most of them were not empirically tested and very few have developed model-based on tools. The limitations of the models and tools developed affect the cultural competence of health service gaps.

Uncertainty of research evidence based on cultural nursing and knowledge of cultural differences makes nurses or other health care providers difficult to provide quality services and cost

effective treatments. Although there are similarities between people or patients of some people in the world, there are also differences that arise from cultural, religious, family background and individual or group experiences affecting care. This difference not only affects the patient's values, beliefs and behaviors, but also supports the idea of health care and affects patient expectations.

According to the American Nursing Association (2011), nurses must understand how different groups are within culturally diverse groups. Therefore nurses must understand how to understand their culture, how they determine the health and severity of the disease, how they believe in the cause of the illness they are suffering, and how they care for family members with the illness. Lack of awareness and unsuccessful nurses in providing culturally competent nursing care can increase the stress or pressure experienced by patients or families and can lead to nursing care that is not optimal. Research conducted by Hardy et al. (2011) related to the culture of competence obtained by the lack of familiarity between families and nurses, difficulties in communicating, religious diversity, difficulty in obtaining information, distrust of health services, and the discomfort of discrimination. The difficulty often experienced by nurses to avoid errors in applying cultural competence is stereotypes to patients. This often makes the label stand out for a particular culture or ethnic group based on characteristics such as patient or family appearance, patient or family response, ethnicity, country of origin, or custom of a particular religious group.

Berlin, Nilsson and Tornkvist (2010) conducted a study of 51 child nurses working in hospitals, divided into 2 groups: 1) 24 child nurses conducted cultural competence training for the intervention group and 2) 27 child nurses in the control group not training. The results obtained have significant improvements in the areas of cultural knowledge, cultural skills, and cultural gatherings among child care nurses who are trained in cultural competence. There are 92% of child nurses from the intervention group there is an increase in their desire to learn more about culturally competent health services. Davis, Larson, Control, and Cabrera (2011) conducted a study of 13 Mexican-American Families whose children were admitted in hospital for diseases that restricted family activity in hospitals. Families get different behaviors in places where their child is being treated. Non-Hispanic white patients feel the difference in health services for their children with special needs compared to other ethnic groups. Delayed care is reported more frequently by Hispanic white patients, followed by

other Hispanic / Hispanic blacks (Kerfeld, Hoffman, Ciol, & Kartin, 2010).

Pergert, Enskar, and Bjork (2008) conducted a study of 12 patient interviews administered with nurses in the Swedish children's ward. They found that the nurses need to be prepared for emotional over-expression in cross-cultural care and to know strategies to protect professional calm so they can use it consciously and positively. Research conducted by Tavallali et al. (2016) reported that communication between patients and minority nurses is the most important and key indicator of successful nursing care quality. All parents involved in the study expressed the importance of ethnic minority nurses with skills and skills in Swedish which lacked less satisfaction with parents of nursing care provided by minority nurses. Similarly, in a study conducted by Davies, Larson, Contro and Cabrera (2011) on Mexican-American families gained a lack of nursing care services and there was discrimination received from their child health providers as a result of language barriers.

Barriers to cultural sensitivity in the nursing profession may include stereotypes, discrimination, racism, and prejudice. There are situations where we can describe the lack of sensitivity without realizing it or intending to offend others. Simple steps such as dealing with patients by naming their last names or asking how they want to be handled show respect. In addition, there is limited research in the literature to inform care providers in children, especially doctors and nurses about their progress in providing culture competent care for their patients and parents and what problems develop as they care for different patient populations. Although, a large number of literatures exist which state why it is important to provide culture competent care for patient populations. A guide factor in the need to prepare cultural-based care competencies is a quickly changing demographic culture worldwide.

Furthermore, in Indonesia there is little or no knowledge of the patient's cultural background, especially for pediatric, socio-economic, ethnic, linguistic, and religious patients; Cultural competence among nurses has received little attention in Indonesia; and the lack of formal education and training for nurses may contribute to the lack of culturally competent care. Therefore, psychometric development and evaluation of Cultural Competency Scale for Clinical Pediatric Nurse (CCS-CPN) in Indonesia is urgently needed. This scale can serve as a guide for child nurses to provide cultural competence and identify strengths or weaknesses in the delivery of nursing care.

## 2 METHODS

Qualitative and quantitative design was used to develop an instrument to develop Indonesian cultural competency for clinical pediatric nurse and evaluate its psychometric property. In this study, the setting was in general hospitals, Indonesia. Based on DeVellis (2012), scale development procedures involved the following eight steps.

### 2.1 Step 1: Review Literature

Based on the literature review regarding cultural competency, cultural competency in nursing, in-depth interviewed (n=15) and the focus group discussion (n=30), six dimensions and 75 items of the Cultural Competency Scale for Clinical Pediatric Nurse (CCS-CPN) in Indonesia were identified. It consisted of 1) culture awareness of pediatric nurse (18 items), 2) culture knowledge of pediatric nurse (17 items), 3) culture skill of pediatric nurse (16 items), 4) culture encounter of pediatric nurse (7 items), 5) culture desire of pediatric nurse (8 items), and 6) culture sensitivity of pediatric nurse (9 items).

### 2.2 Step 2: Generation of an Item Pool

The six dimensions of the CCS-CPN were performed based on data collected from literature review, focus group, and interview then generated into a large pool of items.

### 2.3 Step 3 Determination of Item Format

All items will be written in a structure of the five-point Likert scale format. Five-point Likert scale was used to increase response rate and response quality along with reducing respondents' frustration level.

### 2.4 Step 4: Determination of Validity

Content validity of the CCS-CPN was conducted by pediatric nurses from five hospitals. The Content Validity Index (CVI) was .86. Twelve items were modified because of lack of clarity. Thus, the CCS-CPN consisted of six dimensions with 75 items.

### 2.5 Step 5: Pre Test

Content validity of the CCS-CPN was conducted by The Cronbach's alpha coefficients for overall scale and its six dimensions were .86, .81, .81, .78, .78, and .63, respectively. After deleting one item that had low item-to-total correlation, Cronbach's alpha

coefficient of culture sensitivity of pediatric nurse dimension increased to 0.70.

### 2.6 Step 6: Field-test

The researcher administered the CCS-CPN, Demographic Data Form, and Marlowe-Crowne Social Desirability Scale to 450 pediatric nurses at twenty pediatric wards in Indonesia.

After an approval from the Ethics Committee at Faculty of Nursing, University of Sumatera Utara, Indonesia and the directors of nursing from twenty general hospitals in Indonesia, the survey packages were distributed to respondent through the head nurse of the pediatric ward in each general hospital from June to October, 2017. Each survey package included a cover letter, CCS-CPN, Demographic Data Form, and Marlowe-Crowne Social Desirability Scale, and informed consent form. Respondent were asked to complete the questionnaires and return it to the researcher.

### 2.7 Step 7: Evaluation of Items

At this step, evaluate the performance of the individual items by processing rotation according to EFA principle.

### 2.8 Step 8: Determination of Reliability

At this step consisted of 1) internal consistency, 2) test-retest, and 3) contrasted group approach.

## 3 RESULTS

After testing the assumptions for EFA, 450 participants were retained for further analysis. To test for the construct validity of the CCS-CPN, the distributions and Pearson correlation coefficients between the variables were first examined. The descriptive statistics indicated the absence of highly skewed distribution and kurtosis. The results of the correlational analysis showed that no pairs of variables were highly correlated based on Munro's criteria (Munro, 2005). The scatter plot show strong linear relationship with positive correlation. In factor analysis, the most commonly recommended approach for outlier detection is the Mahalanobis Distance and box plots. Using a criterion of p-values equals to .001 with 75 df, critical  $\chi^2$  equaled 118.59, 40 outliers were deleted. Therefore, 450 participants were retained.

Table 1: Results of demographic data of pediatric nurses (N=450).

Items	Frequency	Percent
Gender		
Male	63	14
Female	387	86
Age (years)		
< 30 years old	91	20
30-40 years old	319	71
>40 years old	40	9
Religion		
Muslim	246	55
Christian	198	44
Catholic	6	1
Marital Status		
Single	166	37
Married	284	63
Education		
Bachelor degree	450	100
Work experience in pediatric nursing		
< 6 years old	179	40
equal 6 years old	84	19
> 6 years old	187	41

At first, an EFA was performed with the 75 item CCS-CPN. Regrettable, the model was unworthy. Thus, an item-total correlation was established. The results revealed that 17 items had low item-total correlations, ranging from .06 to .30 showed that the items might be less consistent and less reliable to reflect the construct when compared with different items in the 75 item CCS-CPN. Consequently, seventeen items were eliminated from 75 item CCS-CPN. Accordingly, 58 items were used to further carry out the EFA and finally resulting in the 30 items.

In this study as shown at table 3, EFA was performed various times with the CCS-CPN. The final model be composed of 30 items. Before interpretation of the results, the model fit of the 30 items CCS-CPN were identified. A Kaiser-Meyer-Olkin index of the model was satisfactory (.87). Bartlett's test of sphericity was significant. The Eigenvalues represent in to 16 factors and scree test showed 5-6 factors. The percentages of total variance explained and variance explained for each factor were acceptable only for the model of 30 item CCS-CPN (total 43.21%, each factor varied from 20.71-5.23%). The Eigenvalues of the 30 item CCS-CPN ranged from 2.00 to 12.43.

Factors, items, and factor loadings were interpreted for 30 items CCS-CPN because it had a model fit. The 30 item CCS-CPN be composed of six factors. The factor loadings of: Factor 1) culture awareness of pediatric nurses (5 items, varied from .46 to .84,  $p = .000$ ), 2) culture knowledge of pediatric nurses (6



items, varied from .45 to .76,  $p = .000$ ), 3) culture skill of pediatric nurses (5 items, varied from .54 to .84,  $p = .000$ ), 4) culture encounter of pediatric nurses (3 items, varied from .40 to .63,  $p = .000$ ), 5) culture desire of pediatric nurses (4 items, varied from .62 to .84,  $p = .000$ ) and 6) culture sensitivity of pediatric nurses (7 items, varied from .52 to .79,  $p = .000$ ) were acceptable and significant.

Table 2: The Criteria of EFA for selecting the optimal number.

Methods/The criteria to be retained	CCS-CPN $N=450$ 30 items	Normal Value
Factor method	PAF	PAF may be used if data are not normally distributed
Factor method	Varimax	Varimax rotations produce factors that are uncorrelated
KMO	.87	$\geq .60$
Bartlett's test of sphericity	.000	Sig.000
Eigenvalues	16	$\geq 1$
Scree test	5-6	Data points above the break
Percent of total variance explained	43.21	40% or more

Table 3: The Mean (M), Standard Deviation (SD), and  $t$  of the CCS-CPN Indonesian Version.

Groups	30 item CCS-CPN		
	Mean (SD)	$t$	$p$ (1-tailed)
1	4.11 (0.25)	8.55*	.000
2	2.94 (0.29)		

\* $p < .05$

The results in the table 3 revealed that the mean scores of the 30 items CCS-CPN Indonesian version of pediatric nurses ( $n = 271$ ) having work experience six years or more were significantly higher than those of nurses ( $n = 179$ ) having work experience in pediatric ward less than six years ( $M = 4.11$ ,  $SD = 0.25$ ;  $M = 2.94$ ,  $SD = 0.29$ ;  $t = 8.55$ ,  $p = .000$ ).

The Cronbach's alpha coefficients of total 30 items CCS-CPN were excellent (.85). Cronbach's alpha coefficients of each dimension of the 30 items CCS-CPN were .83, .73, .70, .70, .81, and .83,

respectively. The test-retest results revealed that the mean score of the overall 75 item CCS-CPN and its dimensions measured at Time 1 were positively significant and high correlated with those of measured at Time 2. The means are similar and  $r$  is strong and positive ( $r = .70$ ).

Social desirability test was used to examine the tendency among pediatric nurses to answer in a socially desirable way when taking some personality tests was investigated. In this study, the Indonesian version of Marlowe-Crowne Social Desirability Scale-C (MCSDS-C) was used to establish the degree of social desirability to the respondents answer true or false to a set of socially desirable but impossible statements. The on the whole mean scores of the 30 items of the CCS-CPN did not significant and positively correlated with that of the social desirability ( $r = .06$ ,  $p = .05$ ).

## 4 DISCUSSION

### 4.1 The Development and Components of the CCS-CPN

Many of the criteria considered in developing of the CCS-CPN were based on nurses need to recognize their own cultural values in seeking cultural competence; the nurses perceived the fear of mistakes and crossing boundaries related to the cultural and religious practices of minority patients as particularly stressful (Sindayigaya, 2016).

Increasing cultural and linguistic competence for child nursing is extremely important for several reasons, including: because of age restrictions; eliminating the old gaps in the health status of people of different backgrounds; improve the quality of nursing care; fulfill the legislative, regulatory and accreditation mandates; gain competitive advantage in the market; and reduce the likelihood of liability/malpractice claims.

In this case for Indonesian pediatric nurses defined the term of cultural competence was something new concept, and they did not grasp the concept. The majority respondents had not received education or training in caring for patients with the different ethnic. They were developed cultural competency based on self- experience and feeling. This is different from developed countries, they have a curriculum on cultural competence for nursing students and clinical nurses. Language barriers are reported as the most difficult problem in treating pediatric patients. The substantial perceived barrier is the language barrier, which consists not only of

communication dynamics, but is revealed when parents are not fluent in English. These findings are supported by Beckstrand, Rawle, Callister, and Mandleco as congruent with other studies of nurses that identify the influence of language and cultural differences on the interaction of nurses with patients and parents (Beckstrand, Rawle, Callister, & Mandleco, 2010).

Thus, development of components of cultural competency in clinical pediatric nurse was based on an extensive review of the literature regarding cultural competency as previously mentioned, focus group discussion, in-depth interview, and expert review. In this study used eight steps of DeVellis's Theory of Scale Development. Scale Development is a process of developing a reliable and valid measure of CCS-CPN in order to assess an attribute of interest. The CCS-CPN was developed based on the Campinha-Bacote theory cultural competence (Campinha-Bacote, 2002).

Even though the 30 items CCS-CPN model was acceptable, but could not describe the culture encounter of pediatric nurses dimension because it only 3 item loading in factor 6. This is because most of the pediatric nurses have difficult experience to encounter the patients come from different background, culture, and language. Based on the conceptual framework bagotte theory, in this study found the different dimension of cultural competency. The researcher expected that the culture competence of clinical pediatric nurse composed six dimension, however only five dimension that representative to cultural competency in clinical pediatric nurse in Indonesian version.

It should be the number of items for each dimension equal so that when loading on the six factors will be distributed equally for each dimension (Mitt & Bolt, 2003). Therefore if the number of items is the same per dimension, each dimension will have the same proportion. Pediatric nurses report that it is difficult to express the insecurity and uncertainty they feel when approaching patients or families from different cultural backgrounds from themselves.

They report that they do not always know how to approach or cope when faced with patients who come from different cultural backgrounds but also language differences. Thus, research in the context of cultural competence for child care is required. Barrier to perform cultural encounter included 1) communication difficulties (language differences, confidentiality, and cultural identity in communication related to gender or relating to attitudes in the families), and 2) the institutional aspects that affect the delivery of excellent care to the

family are respected section of the external badistinctionsrriers, determined by (shortfall of space in care areas to house all family members, restriction of resources to offer food and accommodation to all family members and restricted time of the nurses to take care of the family) (Murcia & Lopez, 2016). In addition, this study was conducted in Indonesia; thus, nurses probably perform only nursing assessment in this dimension.

The contrasted group was performed and found that the mean scores of the two versions of the CCS-CPN were significantly different between two nurse groups. This indicated that the construct measured by the CCS-CPN was used in evaluating construct validity. Waltz et al (2017) stated that contrasted group approach was used to compare the two groups of different experience levels using the t-test as well as to assess the ability of the CCS-CPN to detect differences experience between the different group. The researcher found that some evidence for construct validity that is the instrument measures the CCS-CPN Indonesian version. In this study, the cultural competence for clinical pediatric nurse in Indonesian version found that 30 items with six dimension consisted of 1) culture awareness of pediatric nurse, 2) culture knowledge of pediatric nurse, 3) culture skill of pediatric nurse, 4) culture encounter of pediatric nurse, 5) culture desire of pediatric nurse, and 6) culture sensitivity of pediatric nurse. However, in the culture encounter dimension of CCS-CPN it was less representative because it consisted of only 3 from 7 items which could not measure the complete dimension of the cultural encounter aspect. This different from Duck-Hee Chae and Chung-Yul (2014) were developed and psychometrically test the Korean version of the Cultural Competence Scale for Nurses (K-CCSN). They found that the 33-item K-CCSN comprised four subscales: cultural awareness, cultural knowledge, cultural sensitivity, and cultural skills.

## 5 CONCLUSIONS

The 30-item CCS-CPN version of Indonesia consists of six factors: 1) culture awareness of pediatric nurses (5 items), 2) culture knowledge of pediatric nurses (6 items), 3) culture skill of pediatric nurses (5 items), 4) culture encounter of pediatric nurses (4 items), and 6) culture sensitivity of pediatric nurses (7 items) were acceptable and significant. Unfortunately, factor 4 obtained an item that does not represent the dimensions of the culture encounter of pediatric nurses. Therefore, further research is needed by using

different method of Delphi method. It is hoped that using Delphi method will be more applicative and more representative to represent the six factors of cultural competence for Indonesian culture. The Delphi method is designed as a group communication process which aims to achieve a convergence of opinion on a specific real world issue of cultural competency.

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