FNJN

İSTANBUL UNIVERSITY CERRAHPAŞA

Florence Nightingale Journal of Nursing

DOI: 10.5152/FNJN.2021.20041

Research Article

Validity and Reliability of the Neonatal Palliative Care Attitude Scale in Turkey

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Cite this article as: Akay, G., & Aytekin Özdemir, A. (2021). Validity and reliability of the Neonatal Palliative Care Attitude Scale in Turkey. *Florence Nightingale J Nurs, 29*(2), 212-220.

Abstract

AIM: This study aimed to establish the validity and reliability of the Neonatal Palliative Care Attitude Scale in Turkey.

METHOD: This methodological study was conducted between December, 2014, and July, 2017, in the neonatal intensive care unit of 4 hospitals (2 public, 1 university, and 1 private hospital) in the center of a city in eastern Turkey. The study population consisted of all the nurses of the hospitals. No sampling was performed, and the sample consisted of 145 nurses who agreed to participate in the study. The 26-item Neonatal Palliative Care Attitude Scale developed by Kain et al. (2009) was translated into Turkish and then back-translated into English for to determine the validity for Turkey. Experts were consulted to determine the validity of the content. Cronbach's alpha coefficient, test-retest reliability, and item-total correlation were used for reliability. Exploratory and confirmatory factor analyses were used for validity.

RESULTS: Content validity index ranged from .8 to 1.0. The Kaiser–Meyer–Olkin measure of sampling adequacy was .934, for which the Bartlett's test of sphericity was $\chi^2 = 415.127$, $p = .000$. According to the principal component analysis, the Neonatal Palliative Care Attitude Scale in Turkey. had 3 subscales as did the original Neonatal Palliative Care Attitude Scale. The items had factor loadings greater than .40, and the factors accounted for 55.51% of the total variance. The subscales "organization," "resources," and "clinician" had a Cronbach's alpha of .692, .710, and .680, respectively.

CONCLUSION: The Neonatal Palliative Care Attitude Scale in Turkey. has a structure similar to that of the original Neonatal Palliative Care Attitude Scale and has high validity and reliability. It is, therefore, a valid and reliable instrument that can be used to identify nurses' attitudes toward neonatal palliative care.

Keywords: Attitude, neonate, nursing, palliative care, validity-reliability

Introduction

Palliative care is care delivered to eliminate or relieve the symptoms of a disease that does not respond to treatment (National Cancer Institute, 2010). It is a holistic approach to easing or soothing the pain and symptoms among patients with life-threatening illnesses or individuals with disease-related potential (Meghani, 2004). In the 1980s, the World Health Organization (WHO) defined palliative care as "the active total care of people whose disease is not responsive to curative treatment." The WHO redefined it in 2002 as "an approach that improves the quality of life of patients and their families facing the problem associated with a life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual." The WHO has also stated that palliative care is useful early in the course of the illness (Ahmedzai et al., 2004; Simkiss, 2003; World Health Organization, 2020).

Neonatal intensive care units (NICUs) provide treatment and care to neonates with severe and complicated health problems and life-threatening diseases. Therefore, NICU nurses often witness death. They provide end-of-life care to neonates and are in constant contact with them and their family members (Çavuşoğlu, 2013). NICU nurses develop palliative care plans and execute them. They are responsible for helping the patients and their family members cope with fear and anxiety, managing pain, maintaining the patient's vital signs and autonomy, providing a setting for death with dignity, supporting the pa-

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Date of receipt: March 23, 2020
Date of acceptance: July 16, 2020

tient's family members psychosocially, and adhering to cultural and ethical standards (Cherlin et al., 2004; Cimete, 2002).

However, NICU nurses also experience fear, anxiety, denial, anger, guilt, depression, and despair. Those who witness the death of their patients, in particular, sometimes feel a sense of inadequacy and failure. Nurses who deny the diagnosis of a terminal illness may feel at ease for a while; however, it may cause them to focus solely on treatment and treatment-related interventions and ignore other aspects of care. Moreover, a nurse who denies that their patient may die soon is more likely to continue to provide treatment even in cases where recovery is impossible, which may cause more suffering than good to the patient (Cimete, 2002; Çavuşoğlu, 2013). Studies show that NICU nurses are not fully competent at meeting the emotional and spiritual needs of dying neonates and their family members (Cherlin et al., 2004; Hopkinson et al., 2003; Mok et al., 2002).

Neonatal intensive care unit nurses may feel a sense of fear when they fail to provide adequate care to their patients, and therefore end up feeling guilty (Çavuşoğlu, 2013). They may even feel a sense of frustration to see their patients not responding to treatment. They may also become angry at themselves for not being able to alleviate the suffering of their patients (Cimete, 2002). However, defense mechanisms and coping strategies can further desensitize them to the situation that they are in. Such attitudes may prevent them from meeting the needs of dying infants and their family members, resulting in low-quality palliative care. The quality of palliative care can be affected by death anxiety among nurses, their personality traits and attitudes, and some other factors (Kalischuk, 1992).

Neonatal intensive care units nurses play a crucial role in the care of dying infants and their family members. Therefore, it is of utmost importance to determine their attitudes toward palliative care and the factors affecting it. To our knowledge, there is no measure designed to assess nurses' attitudes toward neonatal palliative care in Turkey. Therefore, this study aimed to establish the validity and reliability of the Neonatal Palliative Care Attitude Scale (NIPCAS) for Turkey. We believe that this study will pave the way for further research and help improve the quality of nursing care.

This study aimed to establish the validity and reliability of the NIPCAS for Turkey based on a survey of NICU nurses.

Research Questions

1. Are the items of the Turkish and original versions of the NIPCAS similar in meaning?
2. Do the NIPCAS-TR items have high reliability?
3. Does the NIPCAS-TR yield consistent results when repeated over time (reliability)?
4. Do the Turkish and original versions of the NIPCAS have a similar factor structure?

Method

Study Design

This was a methodological research study.

Sample

This study was conducted between December, 2014, and July, 2017, in the NICUs of 4 hospitals (2 public, 1 university, and 1 private hospital) in the center of a city east of Turkey. The study population included all the nurses in the hospitals. No sampling was performed. Those who met the inclusion criteria and agreed to participate were included in the sample. The sample consisted of 145 nurses (n_1 = 45, n_2 = 45, n_3 = 47, n_4 = 20). A sample size of at least 30 is recommended for a retest to meet the parametric test assumptions. Moreover, a common rule of thumb for scale development and adaptation is to have a sample size 5 to 10 times the number of items in the scale (Esin, 2014). The NIPCAS includes 26 items; therefore, the sample size needed was between 130 and 260 nurses. Per this criterion, the study sample consisted of 145 volunteer nurses (5.6 times the number of the scale items).

All the nurses had at least one year of work experience in the NICUs and were on duty during data collection.

Data Collection

The research data were collected using a sociodemographic data collection form and the neonatal palliative care attitude scale. Data were collected through face-to-face interviews. A retest was conducted on 30 participants 15 days after the first data collection session to determine the consistency of the scale over time.

Data Collection Tools

***Sociodemographic Data Collection Form*:** This form was developed by the researchers on the basis of a literature review (Ay & Öz, 2019; Sahan & Terzioglu, 2017; Turgay & Kav, 2012). The form included items on age, sex, marital status, education, and working conditions (term of employment, working style, satisfaction with the workplace, and palliative care training received).

***Neonatal Palliative Care Attitude Scale (NIPCAS)*:** Kain et al., (2009) developed the 26-item NIPCAS to assess the barriers to and facilitators of palliative care in neonatal nursing. This study established the validity and reliability of the NIPCAS for Turkey and named the latter "*Yenidoğan Palyatif Bakım Tutum Ölçeği (NIPCAS-TR)*" in Turkish (Appendix 1). The items are scored on a 5-point Likert scale; strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly agree (5). The scale consists of 3 subscales: organization (items 5, 8, 15, 16, and 19), resources (items 6, 7, 13, 14, and 24), and clinician (items 20 and 21). The subscale "organization" measures the facilitators and barriers to palliative care in the clinical setting. The subscale "resources" measures the availability of resources to support the palliative care model, such as the physical environment, clinical staff, time allocated to patients' family members, and policies and guidelines for current counseling and neonatal palliative care. The subscale "clinician" measures the ethical concerns faced by nurses owing to technological imperatives and parental demands (Kain et al, 2009).

Higher scores indicate more positive attitudes in all subscales. Kain et al. (2009) reported that 12 out of 26 items were loaded onto the 3 factors. However, they kept the remaining 14 items on the scale and used them to assess the nurses' experiences with palliative care and their beliefs about their patients' deaths (Chen et al., 2013; Forouzi et al., 2017; Kain et al., 2009; Wright & Hilgenberg, 2011). Kain et al. (2009) found that the subscales "organization," "resources," and "clinician" had Cronbach's alpha values of .73, .65, and .63, respectively; for this study, these values were .692, .710, and .680.

Statistical Analysis

The data were analyzed using the Statistical Package for the Social Sciences for Windows v. 18.0 (IBM, SPSS Inc., Chicago, IL, USA) and linear structural relations (LISREL v. 8.80, Scientific Software International, Inc., Lincolnwood, IL, USA). Descriptive statistics were used to measure demographic characteristics. Percentage was used for categorical data while the mean and standard deviation were used for continuous data. Principal component analysis was used to obtain more definite results. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was performed to check the adequacy of sampling. Bartlett's test of sphericity was conducted to determine whether the correlation was suitable for factor analysis. The root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), comparative fit index (CFI), non-normed fit index (NNFI), goodness of fit index (GFI), and adjusted goodness of fit index (AGFI) were used for confirmatory factor analysis. Cronbach's alpha coefficient (internal consistency), test-retest, and item-total correlation were used for reliability.

Ethical Considerations

For the adaptation of NIPCAS into Turkish language and the evaluation of its validity and reliability, written permission was received from the original author of the measurement tool. The study was approved by Ethics Committee of the Faculty of Health Sciences of Atatürk University (10.12.2014/1). Permissions were obtained from the institutions. Participants were informed about the purpose and procedure of the study prior to participation and that they could withdraw from the study at any time without explanation. Participants gave written and verbal consent.

Results

Characteristics of the Participants

Of participants, 44.8% were between 20 and 26 years of age; 98.6% were women; 51% were single; 62.1% had a bachelor's degree; 51% had 1–4 years of work experience in general whereas 51% had 1–2 years of work experience in NICUs; 79.3% worked both day and night shifts; and 65.5% were happy working in NICUs.

Validity of the Language and Content

First, the researchers and 4 different experts (2 instructors from the department of foreign language education of Ataturk University and 2 from pediatric nursing) translated the NIPCAS from English into Turkish. The researchers then compared all the translated versions with the original scale and chose the items that best fit the construct. A Turkish linguist evaluated the grammar of the NIPCAS-TR,

which was then back-translated by 2 English linguists. The researchers then compared the translated and original versions and developed a draft.

For content validity, both the translated and the original versions were emailed to 10 academics who were experts in the field of pediatric nursing. They were asked to assess the items for intelligibility/clarity and cultural suitability using the Davis technique, which is a 4-point rating scale (1 = not relevant, 2 = relevant but needs minor alteration, 3 = very relevant, and 4 = completely relevant) (Esin, 2014). The content validity ratio (CVR) was calculated to assess the experts' feedback. All items were kept on the scale because they had a CVR of .8 to 1.0. A Turkish linguist from the Turkish language department of Atatürk University and other experts were consulted for linguistic validity. A pilot study was conducted with 10 nurses to test the intelligibility of the items. Based on the results of the pilot study, no modifications were made. The participants in the pilot study were not included in the main study.

Validity of the Construct

Exploratory and confirmatory factor analyses were used for construct validity. The KMO measure of sampling adequacy was used to check the adequacy of the sampling, and Bartlett's test of sphericity was used to determine the correlation between the items for factor analysis (Karagöz & Kösterelioğlu, 2008). The KMO was .758, for which the value of Bartlett's test of sphericity was significant (χ^2 = 415.127, p = .000), indicating adequate sampling for the principal component analysis and an adequate correlation between the items for factor analysis (Çapık & Gözüm, 2018; Gözüm & Aksayan 2003).

Table 1

Factor Structure of the Neonatal Palliative Care Attitude Scale - Turkey

		Factor load for one dimension		
Item		**Resources**	**Organization**	**Clinician**
5	The medical staff support palliative care for dying babies in my unit		.619	
8	In my unit, parents are involved in decisions about their dying baby		.587	.496
15	In my unit, when a diagnosis with a likely poor outcome is made, parents are informed of palliative care options		.698	
16	In my unit the team expresses its opinions, values and beliefs about providing care to dying babies		.660	
19	All members of the healthcare team in my unit agree with and support palliative care when it is implemented for a dying baby		.545	
6	The physical environment of my unit is ideal for providing palliative care to dying babies	.626		
7	My unit is adequately staffed for providing the needs of dying babies requiring palliative care and their families	.723		
13	When a baby dies in my unit, I have sufficient time to spend with the family	.768		
14	There are policies/guidelines to assist in the delivery of palliative care in my unit	.578		.425
24	When a baby dies in my Unit, counselling is available if I need it	.608		
20	In my unit, the staff go beyond what they feel comfortable with in using technological life support			.780
21	In my unit, staff are asked by parents to continue life-extending care beyond what they feel is right			.802
	Explained variance (%) (Total: 55.51)	19.82	18.70	16.99
	KMO			.758
	Bartlett (χ^2)			415.127
	P value			.000

Note. KMO = Kaiser–Meyer–Olkin measure

Table 2

Item-Total Correlations and Cronbach's α Values for the Neonatal Palliative Care Attitude Scale - Turkey (n = 145)

Subscale	Item	Mean	SD	Item-total score correlations	When the item is deleted Cronbach's α
Organization	5	3.86	.84	.31	.69
	8	3.11	1.08	.49	.62
	15	2.92	1.15	.48	.63
	16	3.63	.98	.55	.60
	19	3.34	1.036	.41	.66
	Total	3.36	.68		
	Cronbach's α	.692			
Resources	6	2.79	1.14	.43	.678
	7	2.32	1.12	.49	.653
	13	2.15	1.11	.61	.603
	14	2.43	1.11	.49	.652
	24	2.57	1.18	.33	.717
	Total	2.45	.72		
	Cronbach's α	.710			
Clinician	20	3.64	.99	.52	-
	21	3.47	.96	.52	-
	Total	3.56	.83		
	Cronbach's α	.680			

Note. SD = Standard deviation

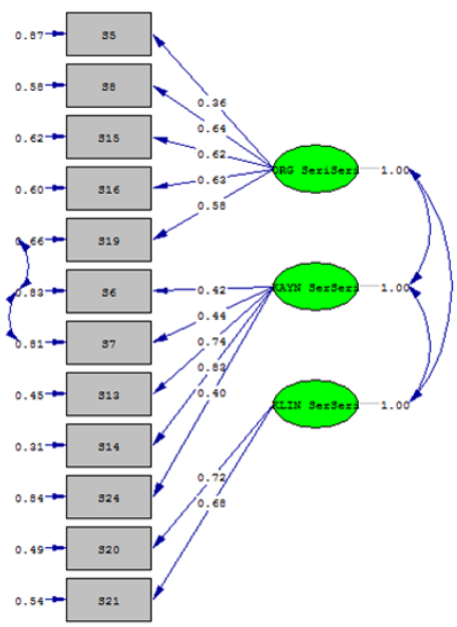

Figure 1

Confirmatory Factor Analysis of the Neonatal Palliative Care Attitude Scale - Turkey

Note. Chi-Square value = 86.01, df = 49, *p* = .00086, root mean square error of approximation = .072

Table 1 shows the items, factor loadings, and explained variance. All items had factor loadings greater than 0.40, and the factors accounted for 55.51% of the total variance. The NIPCAS-TR had 3 subscales (organization, resources, and clinician) as did the original NIPCAS.

Confirmatory factor analysis was used to determine whether the items represented the subscales and whether the subscales accounted for the scale structure. Several indices of fit were used to assess the model fit. The RMSEA, CFI, RMR, SRMR, GFI, and AGFI were .072, .98, .085, .078, .98, and .91, respectively. Thus, the indices of fit showed that the model was acceptable as it was.

Figure 1 shows the subscales and factor loadings of the NIPCAS-TR. Items 6-19 and 6-7 were associated with each other because the modification indices improved the goodness of fit. The model was accepted as it was. The factor loadings of the model ranged from .36 to .83, the explained variance was 55.51%, and all items had t values greater than 1.96.

Reliability

Test-retest was performed to evaluate the consistency of the scale. Item-total score analysis and Cronbach's alpha were used to evaluate internal consistency. Table 2 shows the total item scores and Cronbach's alpha coefficients. The participants had total mean "organization," "resources," and "clinician" subscale scores of 3.36 ± .68, 2.45 ± .72, and 3.56 ± .83, respectively. The item-total correlations (0.31 to 0.61) were statistically significant ($p < .05$, Table 2). The subscales "organization," "resources," and "clinician" had Cronbach's alpha values of .692, .710, and .680, respectively (Table 2).

Pearson's correlation coefficient was used to compare the test-retest scores to determine whether the NIPCAS-TR yielded consistent results when repeated over time (reliability). There was a positive correlation between the test-retest scores for the subscales (organization: $r = .955$, $p < .001$; resources: $r = .835$, $p < .001$; clinician: $r = .935$, $p < .001$).

Discussion

The validity and reliability of a scale should be established first before it is used in a language other than its original. Translating a scale from its original language to another may pose psycholinguistic problems. Group and individual translation methods used in scale adaptation are solutions to linguistic problems that affect its intelligibility (Çapık & Gözüm, 2018; Gözüm & Aksayan, 2003). In this study, the back-translation method was used to establish the validity and reliability of the NIPCAS for Turkey. A total of 10 experts were consulted to determine the validity of the content of the NIPCAS-TR. On the basis of expert feedback, item 2, "I have had the experience of providing palliative care to dying babies and their families" was reworded as "I have provided palliative care to dying babies and their families before;" and item 7, "My unit is adequately staffed for providing the needs of dying babies requiring palliative care and their families" was reworded as "My unit has enough staff who can meet the needs of babies who need palliative care and their families." Irrelevant items were revised according to expert feedback. Following this, an English linguist who knew both languages well evaluated the items in the back-translated version of the scale for semantic changes and reported no change in meaning. The evaluation of the experts confirmed the linguistic validity of the scale. A pilot study was conducted to check the comprehensibility of the NIPCAS-TR. The results showed that the items were comprehensible to the Turkish population.

The CVR was then calculated for the items. Each item had a positive (greater than 0) CVR and was therefore, kept in the scale (Cam & Baysan Arabacı, 2010). The content validity index (CVI) was .97, suggesting that the items reflected the construct intended for measurement, given the fact that the CVI needed to be at least 0.80 (Grant & Davis, 1997). Therefore, on the basis of expert opinion, we can state that the NIPCAS-TR is a suitable measure in terms of linguistic and content validity.

Construct validity refers to the extent to which a scale adequately represents the construct it is supposed to measure (Esin, 2014). In this study, exploratory and confirmatory factor analyses were used to assess the construct validity of the NIPCAS-TR. Factor analysis is commonly used to evaluate construct validity and to test whether items load on different factors (Çapık & Gözüm, 2018; Ercan & Kan, 2004). Prior to factor analysis, the KMO measure was used to evaluate whether the sample was adequate and suitable for factor analysis. Bartlett's test of sphericity was used to determine whether the data was suitable for factor analysis (Karagöz & Kösterelioğlu, 2008). The KMO was .758, suggesting that the sample was suitable for principal component analysis. Bartlett's test of sphericity was significant ($\chi^2 = 415.127$, $p = .000$), indicating that the sample size was adequate and that the correlation matrix was suitable for factor analysis (Büyüköztürk, 2007).

The goal of factor analysis is to reduce individual items into a fewer number of subgroups. Items that measure the same factor are brought together and grouped. A total of 12 items of the NIPCAS-TR were subdivided into 3 groups; organization (items 5, 8, 15, 16, and 19), resources (items 6, 7, 13, 14, and 24), and clinician (items 20 and 21). Items loading on more than one factor, those with less than .10 of difference between factor loadings, and those with factor loadings less than 0.30 were discarded (Çırak, 2006). The factor loadings of the NIPCAS-TR ranged from .545 to .802, and the factors accounted for 55.51% of the total variance. These results show that the explained variance and factor loadings were adequate.

In scale adaptation studies, confirmatory factor analysis is used to test the accuracy of explorato-

ry factor analysis results (Esin, 2014). Some of the common goodness of fit indices are RMSEA, SRMR, CFI, NNFI, GFI, and AGFI. An RMSEA ≤ .08 and $p < .05$ (statistical significance) indicate a good fit, whereas an RMSEA ≤ 0.10 indicates a poor fit. An SRMR < .10, an NNFI and CFI ≥ .90, and an AGFI ≥ .80 indicate a good fit (Akgül, 2005). A GFI ≥ .90 indicates a good fit (Harrington, 2009). The confirmatory factor analysis showed that the RMSEA, CFI, RMR, SRMR, GFI, and AGFI values were adequate. The NIPCAS-TR had an RMSEA, CFI, RMR, SRMR, GFI, and AGFI values of .072, .98, .085, .078, .98, and .91, respectively. A factor analysis of construct validity showed that the data fit the model, that the items and subscales were relevant to the scale, and that each item adequately defined the factor on which it was loaded. These results confirm that the NIPCAS-TR has good construct validity, indicating that it is a valid measure that can be used for the Turkish population.

Of the 26 items, only 12 were loaded on 3 factors. However, Kain et al. (2009) did not remove the remaining 14 items (1, 2, 3, 4, 9, 10, 11, 12, 17, 18, 22, 23, 25, and 26) from the scale. According to earlier studies, they were grouped under the heading "personal work experiences and beliefs" to evaluate nurses' experiences with palliative care and their beliefs about the death of their neonate patients (Chen et al, 2013; Forouzi et al, 2017; Kain et al, 2009; Rebagliato et al., 2000; Wright & Hilgenberg, 2011).

Almost all the participants (97.9%) agreed/strongly agreed with the item "Palliative care is as important as curative care in the neonatal environment;" this was reported by Kain et al. (2009), Chen et al. (2013), Forouzi et al. (2017), and Wright et al. (2011) as 96%, 95%, 96.4%, and 98%, respectively.

Among the participants, 58.6% had experience providing palliative care to dying infants and their families, 51.1% were often exposed to death in the NICUs, 62.8% found it traumatic to care for dying infants, and 33.8% felt a sense of personal failure when an infant died. In Kain et al. (2009), 87% of nurses had experience providing palliative care to dying infants and their families, 69% were often exposed to death in NICUs, 60% found it traumatic to care for dying infants, and 21% felt a sense of personal failure when an infant died. In Chen et al. (2013), 65.5% of Taiwanese nurses had experience providing palliative care to dying infants and their families, 60% were often exposed to death in NICUs, 56.3% found it traumatic to care for dying infants, and 30% felt a sense of personal failure when an infant died. In Forouzi et al. (2017), 85.7% of Iranian nurses had experience providing palliative care to dying infants and their families, 32.1% were often exposed to death in NICUs, 67.9% found it traumatic to care for dying infants, and 32.1% felt a sense of personal failure when an infant died. In Wright et al. (2011), 86% of nurses had experience providing palliative care to dying infants and their families, 42% were often exposed to death in NICUs, 52% found it traumatic to care for dying infants, and 30% felt a sense of personal failure when an infant died.

Of the participants, 86.9% believed that palliative care was necessary in neonatal nursing education and 21.4% had received in-service training to support and communicate with parents of dying infants. Kain et al. (2009) found that 98% of nurses believed that palliative care was necessary in neonatal nursing education and 34% had received in-service training to support and communicate with parents of dying infants; these values were reported by Chen et al. (2013), Forouzi et al. (2017), and Wright et al. (2011) as 96.3% and 60%, 82.1% and 39.3%, and 100% and 46%, respectively. It is noteworthy that the distribution of our participants' responses to the items under the heading "personal work experiences and beliefs" were similar to those reported by earlier studies conducted in different parts of the world (Chen et al, 2013; Forouzi et al, 2017; Kain et al, 2009; Wright & Hilgenberg, 2011).

Internal consistency values indicate that all subgroups address and measure the same construct (Çapık & Gözüm, 2018). Cronbach's alpha is widely used to assess the compatibility between items to determine internal consistencies. It is recommended that Cronbach's alpha coefficient should be at least .70, with higher values indicating greater reliability (Esin, 2014; Karakoç & Dönmez, 2014). The NIPCAS subscales "organization," "resources," and "clinician" had Cronbach's alpha values of .73, .65, and .63, respectively (Kain et al, 2009). The NIPCAS-TR subscales "organization," "resources," and "clinician" had Cronbach's alpha values of .692, .710, and .680, respectively, indicating high internal consistency.

Item-total score correlation is also used to determine internal consistency. This compares the item and total scale variances and focuses on the relationship between them. An item-total correlation

≥.3 suggests that the entire scale and its subscales measure the same construct (Cam & Baysan Arabacı, 2010; Işık & Sakallı Uğurlu, 2009). There is no need to remove any items when the item-total correlation is greater than .3 (Çapık & Gözüm, 2018). The item-total score correlation coefficients of the NIPCAS-TR were adequate (from .31 to .61), indicating that the scale had no questionable items.

Test-retest reliability refers to the consistency between scores recorded across repeated measures for the same individuals. The correlation coefficient between the 2 scores should be greater than .80. In this study, the NIPCAS-TR subscales "organization," "resources," and "clinician" had test-retest correlations of .955, .835, and .935, respectively. This result suggests that the correlation between the 2 measurements was high and similar (Esin, 2014). These results indicate that the NIPCAS-TR is a valid and reliable measure for the assessment of nurses' attitudes toward neonatal palliative care in the Turkish population.

Study Limitations

The study had some limitations. It was conducted only in 4 NICUs; therefore, the results were sample-specific. Data collection lasted longer than expected because nurses working both day and night shifts had to be contacted, appointments had to be made with them, the units were very busy, and it took a long time to obtain the required permissions. The participants tended to give the "expected" responses; therefore, the limitations of previous studies like this one held for this study as well.

Conclusion and Recommendations

This study established the validity and reliability of the Turkish version of the NIPCAS adapted for the Turkish population and evaluated its psychometric properties. The NIPCAS-TR has reliable items, an acceptable test-retest reliability, and a factor structure similar to that of the original scale. The NIPCAS-TR consists of 3 subscales (organization, resources, and clinician) with 12 items. Another 14 items are grouped under the heading "personal work experiences and beliefs" to assess nurses' experiences with palliative care and their beliefs about their patients' deaths.

In conclusion, the NIPCAS-TR is a valid and reliable scale for the Turkish population. Future studies can use it to assess nurses' attitudes toward neonatal palliative care.

Ethics Committee Approval: The study was approved by the Ethics Committee of the Faculty of Health Sciences of Atatürk University (10.12.2014/1).

Informed Consent: Nurses were informed about the purpose and procedure of the study prior to participation. Written and verbal consent was obtained from those who agreed to participate. Written permission was received from the original author of the measurement tool.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – G.A., A.A.Ö.; Design – G.A., A.A.Ö.; Supervision – A.A.Ö.; Resources – G.A., A.A.Ö.; Materials– G.A., A.A.Ö.; Data Collection and/or Processing – G.A., A.A.Ö.; Analysis and/or Interpretation – G.A., A.A.Ö.; Literature Search – G.A., A.A.Ö.; Writing Manuscript – G.A., A.A.Ö.; Critical Review – G.A., A.A.Ö.; Other – G.A., A.A.Ö.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

References

Ahmedzai, S.H, Costa, A., Blengini, C., Bosch, A., Sanz-Ortiz, J., Ventafridda, V., Verhagen, S. C., International working group convened by the European School of Oncology. (2004). A new international framework for palliative care. *European Journal of Cancer, 40*(15), 2192-2200. [Crossref]

Akgül, A. (Ed.). (2005). *Tıbbi Araştırmalarda istatistiksel analiz teknikleri SPSS uygulamaları. [Statistical anlaysis techniques in medical research, SPSS applications]* 3. Baskı. Ankara, Turkey: Emek Ofset.

Ay, M.A., & Öz, F. (2019). Nurses attitudes towards death, dying patients and euthanasia: A descriptive study. *Nursing Ethics, 26*(5), 1442-1457. [Crossref]

Büyüköztürk, Ş. (Ed.). (2007). Veri analizi el kitabı. *[Data analysis handbook]* (pp.167-182). 8. Baskı. Ankara, Turkey: Pegem Ak Yayıncılık.

Cam, M., & Baysan Arabacı, L. (2010). Tutum ölçeği hazırlamada nitel ve nicel adımlar. [Qualitative and quantitative steps on attitude scale construction] *Hemşirelikte Araştırma Geliştirme Dergisi, 12*(2), 59-71.

Chen, C. H., Huang, L. C., Liu, H. L., Lee, H. Y., Wu, S. Y., Chang, Y. C., & Peng, N. H. (2013). To explore the neonatal nurses' beliefs and attitudes towards caring for dying neonates in Taiwan. *Matenal and Child Health Journal, 17*(10), 1793-1801. [Crossref]

Cherlin, E., Schulman-Green, D., McCorkle, R., Johnson-Hurzeler, R., & Bradley, E. (2004). Family perceptions of clinicians' outstanding practices in end-of-life care. *Journal of Palliative Care, 20*(2), 113-116. [Crossref]

Cimete, G. (Ed.). (2002). *Yaşam sonu bakım: Ölümcül hastalarda bütüncü yaklaşım. [Care in the terminal period of life: Holistic approach in deadly patients].* Istanbul, Turkey: Nobel Tıp Kitabevi.

Çapık, C., & Gözüm, S. (2018). Intercultural scale adaptation stages, language and culture adaptation: Updated guideline. *Florence Nightingale Journal of Nursing, 26*(3), 199-210. [Crossref]

Çavuşoğlu, H. (Ed.). (2013). *Çocuk sağlığı hemşireliği [Pediatric nursing].* (pp.133-146). Cilt I. 11. Baskı. Ankara, Turkey: Sistem Ofset Basımevi.

Çırak G. Üniversite Öğrencilerinin Ahlaki Yargı Yetenekleri ve Ahlaki Yargı Yetenekleri ile Kendini Gerçekleştirme Düzeylerinin Karşılaştırılması (Yüksek Lisans Tezi). [Moral judgement abilities of the university students and the comparison of their moral judgement abilities and their levels of self-realization (Master's Thesis)]. Adana: Çukurova Üniversitesi; 2006.

Durak, A. (1994). Beck Umutsuzluk Ölçeği geçerlik ve güvenirlik çalışması. [Validity and reliabiliy of the Beck Hopelessness Scale]. *Türk Psikoloji Dergisi, 9*(31), 1-11. [Crossref]

Ercan, İ., & Kan, İ. (2004). Ölçeklerde güvenilirlik ve geçerlilik. [Reliability and validity in the scales] *Uludağ Üniversitesi Tıp Fakültesi Dergisi, 30*(3), 211-216.

Esin, M.N. (2014). *Veri toplama yöntem ve araçları & Veri toplama araçlarının güvenirlik ve geçerliği* [Data collection methods and tools & Reliability and validity of data collection tools]. In Erdoğan, S., Nahcivan, N., & Esin, M. N. (Eds), *Hemşirelikte araştırma süreç, uygulama ve kritik* [Research process, application and critical in nursing]. (pp. 215-231). Istanbul, Turkey: Nobel Matbaacılık.

Forouzi, M. A., Banazadeh, M., Ahmadi, J. S., & Razban, F. (2017). Barriers of palliative care in neonatal intensive care units: Attitude of neonatal nurses in southeast Iran. *American Journal of Hospice & Palliative Medicine*, *34*(3), 205-211. [Crossref]

Gözüm, S., & Aksayan, S. (2003). Kültürlerarası ölçek uyarlaması için rehber II: Psikometrik özellikler ve kültürlerarası karşılaştırma. [A guide for transcultural adaptation of the scale II: Psychometric characteristics and cross-cultural comparison]. *Hemşirelikte Araştırma Geliştirme Dergisi, 5*(1), 3-14.

Grant, J. S., & Davis, L. L. (1997). Focus on quantitative methods, selection and use of content experts for instrument development. *Research in Nursing & Health, 20*(3), 269-274. [Crossref]

Harrington, D. (Ed). (2009). *Confirmatory factor analysis*. Newyork: Oxford University Press. [Crossref]

Hopkinson, J.B., Hallet, C.E., & Luker, K.A. (2003). Caring for dying people in hospital. *Journal of Advanced Nursing*, *44*(5), 525-533. [Crossref]

Işık, R., & Sakallı Uğurlu, N. (2009). Namusa ve namus adına kadına uygulanan şiddete ilişkin tutumlar ölçeklerinin öğrenci örneklemiyle geliştirilmesi. [The development of attitudes toward honor scale and attitudes toward violence against women for protecting honor scale with a student sample]. *Türk Psikoloji Yazıları, 12*(24), 16-24.

Kain, V., Gardner, G., & Yates, P. (2009). Neonatal palliative care attitude scale: Development of an instrument to measure the barriers to and facilitators of palliative care in neonatal nursing. *Pediatrics, 123*(2), e207-e213. [Crossref]

Kalischuk, R. G. (1992). *Nurses' perception of death education* (Master's dissertation). Lehtridge, Alberta, University of Lethbridge.

Karagöz, Y., & Kösterelioğlu, İ. (2008). İletişim becerileri değerlendirme ölçeğinin faktör analizi metodu ile geliştirilmesi. [Developing evaluation scale of communication skills with factor analysis]. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 21*, 81-98.

Karakoç, F. Y., & Dönmez, L. (2014). Ölçek geliştirme çalışmalarında temel ilkeler. [Basic principles of scale development]. *Tıp Eğitimi Dünyası, 40*(13), 39-49. [Crossref]

Meghani, S. H. (2004). A concept a nalysis of palliative care in the United States. *Journal of Advanced Nursing, 46*(2), 152-161. [Crossref]

Mok, E., Lee, W. M., & Wong, F. K. (2002). The issue of death and dying: Employing problem-based learning in nursing education. *Nurse Education Today, 22*(2), 319-329. [Crossref]

National Cancer Institute, (2010). *Palliative care In cancer*. (2020, 12 February). Retrieved from http://www.cancer.gov/Cancertopics/ Factsheet/Support/Palliative-Care

Rebagliato, M., Cuttini, M., Broggin, L., Berbik, I., de Vonderweid, U., Hansen, G., Kaminski, M., Kollée, L. A., Kucinskas, A., Lenoir, S., Levin, A., Persson, J., Reid, M., Saracci, R., EURONIC Study Group (European Project on Parents' Information and Ethical Decision Making in Neonatal Intensive Care Units). (2000). Neonatal end-of-life decision making physicians' attitudes and relationship with self-reported practices in 10 European countries. *JAMA, 284*(19), 2451-2459. [Crossref]

Sahan, F. U. & Terzioglu, F. (2017). Nurses' knowledge and practice toward gynecologic oncology palliative care. *Journal of Palliative Care and Medicine, 7*(4), 1-6. [Crossref]

Simkiss, D. (2003). Palliative care for children. *Journal of Tropical Pediatrics, 49*(6), 324-326. [Crossref]

Turgay, G., & Kav, S. (2012). Turkish healthcare professionals' views on palliative care. *Journal of Palliative Care, 28*(4), 267-273. [Crossref]

World Health Organization, (2012). *WHO definition of palliative care*. (2020, 11 February). Retrieved from https://www.who.int/cancer/palliative/definition/en/

Wright, V., & Hilgenberg, C. (2011). Why is end-of-life care delivery sporadic? A quantitative look at the barriers to and facilitators of providing end-of-life care in the neonatal intensive care unit. *Advances in Neonatal Care, 11*(1), 29-36. [Crossref]

Appendix 1

Yenidoğan Palyatif Bakım Tutum Ölçeği (NIPCAS-TR)

Lütfen aşağıda yer alan ifadelerin karşısında yer alan boşluklardan size göre uygun olana (X) işareti koyunuz.

Maddeler	**Kesinlikle katılmıyorum**	**Katılmıyorum**	**Bilmiyorum/ Fikrim yok**	**Katılıyorum**	**Kesinlikle katılıyorum**
1. Palyatif bakım yenidoğan ünitesinde tedavi edici bakım kadar önemlidir.					
2. Benim ölmekte olan bebekler ve ailelerine palyatif bakım verme deneyimim oldu.					
3. Bir bebek öldüğünde, kişisel başarısızlık duygusu hissediyorum.					
4. Toplum, yenidoğan palyatif bakımı destekler.					
5. Benim ünitemde, ölmekte olan bebeklerin palyatif bakımını tıbbi personel destekler.					
6. Benim ünitemin fiziksel koşulları, ölmekte olan bebeklerin palyatif bakımını sağlamak için idealdir.					
7. Benim ünitem, ölmekte olan bebeklerin ve ailelerinin palyatif bakım ihtiyacını karşılamak için yeterli personele sahiptir.					
8. Benim ünitemde ebeveynler, ölmekte olan bebekleriyle ilgili kararlara katılırlar.					
9. Ölmekte olan bebeklere palyatif bakım vermeyle ilgili önceki deneyimlerim taktir görmüştür/ödüllendirilmiştir.					
10. Benim ünitemde ölmekte olan bebeklerin ağrısını dindirmek/kesmek benim için önceliklidir.					
11. Yenidoğan ünitesinde sık sık bebek ölümleriyle karşılaşırım.					
12. Yenidoğan hemşireliği eğitiminde palyatif bakımın yer alması gereklidir.					
13. Benim ünitemde bir bebek ölürken, bebeğin ailesiyle geçireceğim yeterli zamana sahip olurum.					
14. Benim ünitemde palyatif bakımı uygulamaya yardım etmek amacıyla hazırlanmış politikalar/kurallar vardır.					
15. Benim ünitemde, bir bebeğe kötü bir teşhis konduğunda ebeveynler palyatif bakım seçenekleriyle ilgili bilgilendirilir.					
16. Benim ünitemde, ekip üyeleri ölmekte olan bebeklere bakım verme konusunda görüşlerini, değerlerini ve inançlarını ifade edebilirler.					
17. Ölmekte olan bebeklere bakım vermek benim için travmatiktir.					
18. Ben, ölmekte olan bebeklerin ebeveynleriyle iletişim kurmak ve onları desteklemek için hizmet içi eğitim aldım.					
19. Benim ünitemde, sağlık bakım ekibinin tüm üyeleri, ölmekte olan bir bebeğe palyatif bakım uygulanacağı zaman bakıma katılır ve destekler.					
20. Benim ünitemde, çalışanlar teknolojik yaşam desteğini kullanarak onları rahat hissettirmenin ötesine geçer.					
21. Benim ünitemde, ebeveynler hissettiklerinin doğruluğunun ötesinde yaşam süresini uzatıcı bakımı personelden isterler.					
22. Ölümle ilgili kişisel tutumum, palyatif bakım verme konusunda istekliliğimi etkiler.					
23. Palyatif bakım, yenidoğan hemşireliği değerlerine karşıdır.					
24. Benim ünitemde bir bebek ölürken, gerekli olursa ben danışmanlık verebilirim.					
25. Toplumda, hiçbir koşulda bebeklerin ölmemesi gerektiğine dair bir inanış vardır.					
26. Yenidoğan yoğun bakım ortamında tedavi edici bakım, palyatif bakımdan daha önemlidir.					