

Exploratory Factor Analysis of the Indonesian Version of the Clinical Learning Environment, Supervision, and Nurse Teacher Scale (CLES + T)

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Abstract

Background and Purpose: The purpose of this article is to describe an evaluation of psychometric properties of the Indonesian version of the Clinical Learning Environment, Supervision, and Nurse Teacher (CLES+T) scale, a scale that measures nursing students' perceptions of their clinical learning environment.

Methods: The CLES+T was completed by 292 nursing students. Inter-item correlations, exploratory factor analysis, Cronbach's alpha, and evidence of validity were used to examine reliability and validity.

Results: Four factors were extracted that explained 58% of the variance. Cronbach alphas ranged from .86 to .95. Wording to describe different titles of supervisors was unclear to some of the participants.

Conclusion: The Indonesian version of the CLES+T is a reliable version. More research is needed to clarify some of the wording.

Key Words: *clinical learning, nursing education, factor analysis, Indonesia*

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Introduction

The clinical learning environment (CLE) is a crucial part of nursing education that plays a role in the success of nursing students (Doyle et al., 2017) and is reliant on support of Registered Nurses (Anderson, Moxham, & Broadbent, 2018). In Indonesia, supervision of nursing students in the CLE may be performed by nurses employed by the hospital and/or by nurses employed by an academic institution. As the CLE is a crucial part of nursing education, it is important to understand students' perceptions of that learning environment in order to facilitate their learning in that environment. The purpose of this paper is to describe the psychometric properties of the Indonesian version of the Clinical Learning Environment, Supervision, and Nurse Teacher (CLES+T) scale. The specific aims of this evaluation included to:

1. Determine item characteristics (e.g., central tendency, dispersion).
2. Determine/assess/confirm dimensionality (subscales).
3. Assess internal consistency reliability of data for the obtained subscales.
4. Obtain evidence to support the validity of data for the obtained subscales.

In Indonesia, Adila (2015) found the CLE was often not conducive for nursing students to develop the necessary skills, competences, and attitudes for successful clinical practice. In her qualitative descriptive study of clinical instructors and nursing diploma students, the students reported that their experience of clinical supervision was lacking in support, trust, and positive reinforcement from a clinical instructor. She recommended that regular training should be given to clinical instructors on how to precept nursing students in a clinical setting. (Adila, 2015).

However, in two previous studies performed in Indonesia, nursing students perceived that the clinical supervision they experienced was categorized as adequate to good, on a 3-point scale (Jaswanto, 2012; Purwani, 2010).

The Indonesian version of the CLES+T scale was first used in a study of 46 nursing students from one nursing school (Priyanti & Nahariani, 2016). In 2018, the Indonesian version was also used with 165 post baccalaureate nursing students from three different nursing schools (Kurdi, Nahariani & Priyanti, 2018). The researchers concluded that nursing students' success in the CLE was determined primarily by the supervisory relationships in the hospital ward and the role of nursing lecturers.

A larger study using the Indonesian version of the CLES+T in a variety of CLEs was needed to provide additional information regarding the tool's psychometric properties. The purpose of this article is to report on psychometric analysis of the CLES+T scale completed by 292 Bachelor of Nursing students who had clinical placements in one of thirteen hospitals, rural and urban, throughout Indonesia.

Background and Conceptual Framework

Part of the learning process for nursing students is constructing effective experiences in the clinical environment (Payne, 2016). Learning in the clinical practice environment plays a key role in developing future nurses (Doyle et al., 2017). Nurses who have a role in mentoring and supporting nursing students in the clinical environment help facilitate learning and evaluating skills and competencies (Lasater, 2011). These nurses also serve as role-models for the nursing student (Myrick, Yonge, & Billay, 2010). A positive learning environment enabled by the mentoring/supervising nurse can make a substantial difference in the learning that occurs (Mikkonen, Elo, Tuomikoski, & Kääriäinen, 2016).

Instruments that evaluate the quality of the CLE are recommended as the CLE is a key strategy in educating future nurses (Mansutti, Saiani, Grassetti, & Palese, 2017). The CLES+T scale has been used to evaluate experiences of nursing students in multiple countries receiving education, mentorship, and support from nurses in the CLE (Nepal et al., 2016; Priyanti & Nahariani, 2016; Saarikoski, Isoaho, Warne, & Leino-Kilpi, 2008; Watson et al., 2014). The CLES+T scale measures the student's perception of the quality of CLE (Saarikoski & Strandell-Laine, 2018) and is the most translated and validated instrument to measure CLE across countries (Mansutti et al., 2017). The items in the scale describe the ideal learning environment, supervisory relationship, and role of the nurse teacher (Saarikoski et al., 2008). The scale contains 34 items and five subdimensions or factors: Pedagogical atmosphere (9 items), Leadership style of the ward (4 items), Premises of nursing in the ward (4 items), Supervisory relationship (8 items), and Role of the nurse teacher (9 items). Each item is answered on a 5-step continuum scale of 1) fully disagree, 2) disagree to some extent, 3) neither agree nor disagree, 4) agree to some extent, and 5) fully agree. Permission to use the scale in this study was obtained prior to implementation of the research.

The theoretical framework of the scale is based on 87 empirical studies, five literature reviews, five reports of audit instruments, and seven discussion papers (Saarikoski et al., 2008). Themes identified by a review of those studies and papers formed the basis of subdimensions of the scale (Saarikoski et al., 2008). The subdimension of Pedagogical atmosphere was developed from the themes of staff relationships, ward culture and atmosphere, communication with staff, learning situations, and teaching and supervision; Leadership style of the ward from the themes of nursing management, team spirit, and quality management; Premises of nursing on the ward from the themes of nursing care, quality care, and reports and information flow; Supervisory

relationship from the themes of supervisory practices, support, confidentiality, and mentoring; and Role of the nurse teacher from the themes of teaching of skills, theoretical knowledge, application of theory, tutorial discussions, evaluation, and cooperation with clinical nurse teacher (Saarikoski & Strandell-Laine, 2018).

In the original study of 549 students in Finland, the five factors explained 67% of the variance and the Cronbach alpha coefficients of the scale and subdimensions ranged from 0.77 to 0.96 (Saarikoski et al., 2008). The scale has previously been used in Indonesia with 46 nursing students (Priyanti & Nahariani, 2016). In that study, the five factors also explained 67% of the variance and Cronbach alpha coefficient of the total scale was 0.79. In other studies using the CLES+T, four factors (Lovrić et al., 2016; Mueller, Mylonas, & Schumacher, 2018; Watson et al., 2014), six factors (Atay et al., 2018), and seven factors have been extracted (Kim, Yoo, & Kim, 2018).

Methods

Sample and Setting

After ethical clearance was obtained from the appropriate ethical committees in Indonesia and Australia, a demographic questionnaire and the CLES+T scale were delivered electronically between April and May 2018 to a convenience sample of second- and third-year nursing students from one baccalaureate nursing program in Indonesia. The nursing students had completed at least one clinical placement in one of thirteen hospitals that are part of a private hospital group in Indonesia with six hospitals in the urban Jakarta area and seven in rural areas of west, central, and east Indonesia. All students were older than 18 years of age, with an average age of 20 years. The majority of students had a clinical placement in the urban Jakarta area (60%) in an adult or

pediatric medical-surgical ward (47%), were in the third year of the nursing program (51%) and were female (84%).

The scale was sent to 796 students and 406 students started completing the scale. Of these 406 students, only 292 students completed more than 50% of the scale. Seventeen of the 292 students did not complete the last nine items related to Role of the nurse teacher. Data in this paper is reported on the 292 students. As there are 34 items in the survey, this is slightly under the rule-of-thumb ratio of 10:1 participant to item ratio; however, a smaller sample size may be used in factor analysis when several variables load strongly ($>.50$) on each factor (Costello & Osborne, 2005).

Procedure

Data were collected electronically between April and May 2018. Eligible participants received a text that gave an overview of the study and a link to the electronic demographic questionnaire and the CLES+T scale. Once the link was opened, more information about the study and informed consent was provided. Informed consent was described to the participants and they were informed that clicking on the button “next” to proceed with the study would be considered agreeing to participate in the study. Participants were also informed that they could stop completing the survey at any time and that all responses were anonymous.

Analysis

Analysis of data was completed using IBM SPSS Statistics Version 25. Descriptive statistics were calculated on all items of the Indonesian version of CLES+T scale to determine central tendency, variability, and distribution across item responses. Exploratory factor analysis was completed using principal component analysis, as that gave the most satisfactory solution. This corresponds with the analysis used in the original study and the previous Indonesian study

(Priyanti & Nahariani, 2016; Saarikoski et al., 2008). Promax rotation was used, as previous research has indicated that the factors are correlated (Watson et al., 2014) and only factor loadings $\geq .30$ were examined (Costello & Osborne, 2005). For factor analysis and comparison of means, the imputation method of mean substitution was used. This method of imputation can be used with missing data in Likert-type scales (Fox-Wasylyshyn & El-Masri, 2005).

Several strategies were used to complete reliability analysis. Cronbach's coefficient alpha was used to estimate internal consistency for the scale and for each factor. Inter-item correlations were assessed using Pearson correlation coefficient and considered good if the coefficients ranged from .30 to .70 (Ferketich, 1991). Evidence for validity for the Indonesian version of the CLES+T focused on face, content, and construct validity.

Results

Characteristics of the 34-items of the Indonesian version of CLES + T

Descriptive statistics for each of the items of the scale are presented in Table 1. Each item had a mean higher than 3.0, the midpoint of the five-point continuum scale. The lowest mean was 3.02 for the item "The staff were generally interested in student supervision" and the highest mean was 3.87 for the item "The ward can be regarded as a good learning environment." Both of these items are part of the subscale, Pedagogical atmosphere. For the nine items in that subscale, the mean was 3.44, with a standard deviation of .88. For the four items in the subscale Leadership style of the ward manager, the mean was 3.49 and a standard deviation of .3. For the subscale, Nursing care on the ward, the mean of the four items was 3.38 and a standard deviation of .81. For the eight items in the subscale Content of supervisory relationship, the mean was 3.34 and a standard deviation of .90. For the subscale, Role of the nurse teacher, with nine items, the mean was 3.61 with a standard deviation of .81. The alpha-if-deleted for each of the 34 items

ranged from .947 to .949 and deleting any item would not improve the overall Cronbach's alpha of .950

Dimensionality of the Indonesian version of CLES + T

Exploratory factor analysis was used on the 34-item scale. Multiple solutions using principal component analysis and principal factor analysis were evaluated to determine the best solution that made the most sense theoretically and intuitively (Pett, Lackey, & Sullivan, 2003). Only factor loading scores that are greater than .3 were reviewed, as that was the minimal loading of an item to factor (Costello & Osborne, 2005). For each solution, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were evaluated to determine if there were sufficient numbers of significant correlations among the items to continue with the factor analysis (Pett et al., 2003). In each solution, the KMO was .935, Bartlett's test of sphericity was significant ($\chi^2=6415.78$, $df=561$, $p<.001$) indicating correlations between items, and all the items loaded on at least one factor $> .3$.

Eigenvalues greater than one and scree plots were evaluated in each solution to help evaluate the factors (Costello & Osborne, 2005; Ferketich & Muller, 1990). Examination of eigenvalues and scree plots of the different solutions suggested an extraction of between four to six factors. The four-, five-, and six-factor models were compared. The amount of variance extracted for each of these models was 58%, 62%, and 65% respectively. The factor pattern matrices of each model were used to compare strength and cleanness of factor loadings (Pett et al., 2003).

The six-factor model, even though it extracted the most amount of variance, did not have a factor loading pattern consistent with the original five factors from the original study (Saarikoski et al., 2008). None of the original factors loaded on a single factor in the six-factor

model. In the five-factor model, the first factor was the eight items from the Supervisory relationship subscale, the second factor had only six of the nine items from the Role of the nurse teacher subscale, the third factor was the nine items from the Pedagogical atmosphere subscale, the fourth factor combined the items from the Premises of nursing on the ward and Leadership style of the ward manager subscales, and the fifth factor was the last three items from the Role of the nurse teacher subscale.

In the four-factor model, which extracted 58% of the variance, the first factor had all eight items of the Supervisory relationship subscale, the second factor had all nine items from the Role of the nurse teacher subscale, the third factor had all nine items of the Pedagogical atmosphere on the ward, and the fourth factor combined the items from the Premises of nursing on the ward and Leadership style of the ward manager subscales. The research team decided that the four-factor model had the cleanest of the factor loadings (see Table 2) and was the most consistent with the framework from the original study (Saarikoski et al., 2008). In the four-factor model, there were minimal crossloadings between factors (only one) and no factor had fewer than three items (Costello & Osborne, 2005). The fourth factor in this study, a combination of Premises of nursing on the ward and Leadership style of the ward manager was named Culture of the ward.

Reliability of the Indonesian version of the CLES + T

To analyze reliability, the Cronbach's alpha, inter-item correlations, corrected item-total correlations, squared multiple correlation, and alpha if deleted were analyzed for each of the four factors (see Table 3). A Cronbach's alpha coefficient of .70 is considered adequate for an instrument in the early stages and .80 for a more developed instrument (Ferketich, 1990). The

Cronbach's alpha for the four factors ranged from .86 to .94, indicating internal consistency of items within the subscales for this well-developed scale.

For inter-item correlations, items that correlate below .30 are not sufficiently related to contribute and items greater than .70 may be redundant (Ferketich, 1991). The means of the inter-item correlations for the four factors ranged from .43 to .66. There are only a few items that are greater than .70 (see Table 4). There are some items that correlate below .30, especially for items between Role of nurse teacher and the other factors, which may indicate that those items are not sufficiently related (Ferketich, 1991). The higher the correction for the corrected item-total correlation, the better the item, and provides a more complete picture of each item (Ferketich, 1991). It is desired that each of the corrected item-total correlations are greater than .30 (Ferketich, 1991). The items in each of the four factors are greater than .30, with the highest corrected item-total correlations in the Supervisory relationship factor (see Table 3).

Higher values for the squared multiple correlation indicates greater consistency within the factor (Pett et al., 2003). The values in this study ranged from .27 (Culture of the ward) to .78 (Supervisory relationship). The Cronbach's alpha if item deleted provides information about if an item was deleted from the scale and is used as part of the overall information in determining if an item should be dropped (Ferketich, 1991). The Cronbach's alpha if deleted for each item in each factor (see Table 3), is close to the Cronbach's alpha for the factor, indicating that there would be little change in the overall Cronbach's alpha of .95 if any of the items were deleted.

Evidence of validity of the Indonesian version of the CLES + T

Initial validity analysis of the Indonesian version was completed by Priyanti and Nahariani (2016). In translating the English version to Indonesian using the rules of the international translation backward and forward, they reported that construct validity was

determined by four experts in nursing and education. They also completed a scale level content validity index (S-CVI) and that result was .94. One of the recommendations from their study was there may have been some confusion among participants regarding use of the word “staff” in the Pedagogical atmosphere factor.

Wording may also have been an issue in this study. After completion of the survey, some participants reported to the researchers that they were unclear about some words used to describe supervision, nurse teacher, and the different titles for supervisor. Some participants also shared that the wording for ward manager was not well understood.

Face validity examines how the survey appeared to the intended participants (Waltz, Strickland, & Lenz, 2010). The scale was delivered to the students electronically. However, while 406 students started completing the scale, only 292 students completed more than 50%. When reviewing the data, the researchers noted that students completed the first few sections of the scale and then stopped. Many did not complete the last two sections of the scale. It is unknown why they did not finish the scale; it may be that they were not able to finish the scale in one sitting, or became tired of answering the questions, and did not realize their progress in completing the scale. Therefore, the format of the electronic scale without a progress bar may have contributed to students not completing the entire scale.

Evaluation of inter-item correlations and factor analysis also provides some evidence for construct validity (Goodwin, 2002). As some of the inter-item correlations are below .30 (see Table 4), especially in the factors of Pedagogical atmosphere and Culture of the ward, it may be that the wording in Indonesian was not clear to each of the participants.

Discussion

The finding of four factors extracted from the scale is different from the original tool (Saarikoski et al., 2008) and from the original Indonesian version (Priyanti & Nahariani, 2016), but it is similar to reported findings from use of the scale in Croatia, Austria, and New Zealand (Lovrić et al., 2016; Mueller et al., 2018; Watson et al., 2014). The four-factor model explained 58% of the variance, which is less than the original study of 67% (Saarikoski et al., 2008) and the first Indonesian study, which also had 67% (Priyanti & Nahariani, 2016). The other four-factor models explained 71% of the variance in Croatia, 73% in Austria, and 58% in New Zealand (Lovrić et al., 2016; Mueller et al., 2018; Watson et al., 2014).

For this study, the best model, using PCA extraction and Promax rotation, yielded the following four factors: 1) Supervisory relationship (the supervision provided by nurses in the clinical setting for students, 8 items), 2) Role of the nurse teacher (the support/teaching provided by nurses from the university in supporting students in the clinical setting, 9 items), 3) Pedagogical atmosphere (the learning atmosphere and activities in the clinical setting, 9 items), and 4) Culture of the ward (the atmosphere of the working environment and culture of patient care in the clinical setting, 8 items).

The four-factor model used in New Zealand also explained 58% of the variance (Watson et al., 2014). Each of the other four-factor models had slightly different factor solutions, (see Table 5). Because of differences in the supervisory role of nurses and nurse educators in Croatia and Austria, the wording for those items was revised, and in the study in Austria, the items for Role of nurse teacher were not included in the scale (Lovrić et al., 2016; Mueller et al., 2018). As the students in this study informed the researchers that they were confused with some of the wording related to supervisor roles, it is recommended that after the wording is reviewed and revised as needed, the revised Indonesian version of the CLES + T scale be tested again.

Limitations

As this study included students from one nursing program and one private hospital group in Indonesia, it may not be generalizable to other CLEs, such as community or mental health settings, other hospital systems, or other nursing programs in Indonesia. Another limitation is that many students who started to complete the CLES + T scale did not complete the scale. It is not known if the format of the online delivery platform or the confusion regarding terms used for nursing supervision made it a challenge to complete the scale. Despite these limitations, the completion of the majority of the scale by 292 students provides additional evidence to the validity and reliability of the Indonesian version of the scale, as the previous use of the scale in Indonesia reported on findings from 46 students.

Relevance to nursing practice, education, or research

The findings from this study can facilitate nurse educators in academic and hospital settings to better describe nursing students' perceptions of the CLE, using the Indonesian version of the CLES + T scale. If nurses welcome students as part of the nursing team, students may feel more comfortable and confident, enabling a successful clinical placement for students and creating a welcoming work environment that promotes learning (Doyle et al., 2017). In this study, the two factors that contributed most to the variance, Supervisory relationship (38%) and Role of the nurse teacher (10%) may indicate that those directly involved with supervising/teaching nursing students in the CLE have the strongest influence on students' perceptions of the CLE, especially nurses providing direct student supervision. The Supervisory relationship also had the most explanatory power in the original study (Saarikoski et al., 2008) and in other studies that yielded four factors (Lovrić et al., 2016; Mueller et al., 2018). The behaviors of nurses supervising students in the clinical setting influences students' accountability

for learning and their ability to be prepared for professional nursing practice (Perry, Henderson, & Grealish, 2018).

Additional research is needed using the Indonesian version of the CLES + T to clarify the wording and provide stronger evidence of validity. It is recommended that the scale is reviewed by nursing leaders and students to clarify the wording used in the Indonesian version. The Indonesian version should also be researched for use in other clinical settings, such as community and mental health. Finally, additional research is needed to explore the impact of students' perceptions of the CLE, especially their perceptions of the nurses supervising/teaching them in the CLE, on student learning and preparation for professional nursing practice.

Conclusion

Based on review of the evidence for reliability and validity of the Indonesian version of the CLES + T scale, the Indonesian version is a reliable and valid tool. There are no items recommended for deletion. As wording was an issue in the previous study in Indonesia (Priyanti & Nahariani, 2016) and in this study, it is recommended that the wording of the scale be reviewed by students and nurses to improve its clarity.

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Tables

Table 1

Item Characteristics

Items		Subscale of original CLES+T	Mean	SD	Range
PED1	The staffs were easy to approach	Pedagogical atmosphere	3.34	.79	1-5
PED2	I felt comfortable going to the ward at the start of my shift	Pedagogical atmosphere	3.35	.84	1-5
PED3	During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions	Pedagogical atmosphere	3.19	.87	1-5
PED4	There was a positive atmosphere on the ward	Pedagogical atmosphere	3.54	.84	1-5
PED5	The staffs were generally interested in student supervision	Pedagogical atmosphere	3.02	.88	1-5
PED6	The staff learned to know the student by their personal names	Pedagogical atmosphere	3.21	1.1	1-5
PED7	There were sufficient meaningful learning situations on the ward	Pedagogical atmosphere	3.82	.84	1-5
PED8	The learning situations were multi-dimensional in terms of content	Pedagogical atmosphere	3.60	.83	1-5

Items		Subscale of original CLES+T	Mean	SD	Range
PED9	The ward can be regarded as a good learning environment	Pedagogical atmosphere	3.87	.92	1-5
LVM1	The WM regarded the staff on her/his ward as a key resource	Leadership style of the ward manager (WM)	3.51	.83	1-5
LVM2	The WM was a team member	Leadership style of the ward manager (WM)	3.55	.83	1-5
LVM3	Feedback from the WM could easily be considered as a learning situation	Leadership style of the ward manager (WM)	3.44	.80	1-5
LVM4	The effort of individual employees was appreciated	Leadership style of the ward manager (WM)	3.45	.85	1-5
NOW1	The wards nursing philosophy was clearly defined	Nursing care on the ward	3.29	.78	1-5
NOW2	Patients received individual nursing care	Nursing care on the ward	3.56	.76	1-5
NOW3	There were no problems in the information flow related to patients' care	Nursing care on the ward	3.18	.82	1-5
NOW4	Documentation of nursing (e.g. nursing plans, daily recording of	Nursing care on the ward	3.46	.87	1-5

Items	Subscale of original CLES+T	Mean	SD	Range
nursing procedures etc.) was clear				
SU1 My supervisor showed a positive attitude towards supervision	Supervisory relationship	3.45	.87	1-5
SU2 I felt that I received individual supervision	Supervisory relationship	3.10	.93	1-5
SU3 I continuously received feedback from my supervisor	Supervisory relationship	3.35	.94	1-5
SU4 Overall, I am satisfied with the supervision I received	Supervisory relationship	3.18	.95	1-5
SU5 The supervision was based on a relationship of equality and promoted my learning	Supervisory relationship	3.35	.88	1-5
SU6 There was a mutual interaction in the supervisory relationship	Supervisory relationship	3.33	.88	1-5
SU7 Mutual respect and approval prevailed in the supervisory relationship	Supervisory relationship	3.47	.83	1-5
SU8 The supervisory relationship was characterized by a sense of trust	Supervisory relationship	3.5	.88	1-5

Items		Subscale of original CLES+T	Mean	SD	Range
NT1T	In my opinion, the nurse teacher was capable to integrate theoretical knowledge and everyday practice of nursing	Role of the nurse teacher (NT): NT enabling the integration of theory and practice	3.76	.81	1-5
NT2T	The teacher was capable of operationalising the learning goals of this clinical placement	Role of the nurse teacher (NT): NT enabling the integration of theory and practice	3.74	.74	1-5
NT3T	The nurse teacher helped me to reduce the theory-practice gap	Role of the nurse teacher (NT): NT enabling the integration of theory and practice	3.61	.81	1-5
NT4C	The nurse teacher was like a member of the nursing team	Role of the nurse teacher (NT): Cooperation between placement staff and NT	3.53	.78	1-5
NT5C	The nurse teacher was able to give his or her pedagogical expertise to the clinical team	Role of the nurse teacher (NT): Cooperation between placement staff and NT	3.65	.76	1-5
NT6C	The nurse teacher and the clinical team worked together in supporting my learning	Role of the nurse teacher (NT): Cooperation between placement staff and NT	3.70	.79	1-5

Items		Subscale of original CLES+T	Mean	SD	Range
NT7R	The common meetings between myself, mentor and nurse teacher were comfortable experience	Role of the nurse teacher (NT): Relationship among student, mentor, and NT	3.47	.87	1-5
NT8R	In our common meetings I felt that we are colleagues	Role of the nurse teacher (NT): Relationship among student, mentor, and NT	3.47	.89	1-5
NT9R	Focus on the meetings was in my learning needs	Role of the nurse teacher (NT): Relationship among student, mentor, and NT	3.55	.83	1-5
PED	Pedagogical atmosphere 9 Items average		3.44	.88	
WM	Leadership style of the ward, 4 Items average		3.49	.83	
NOW	Premises of nursing in the ward, 4 Items average		3.38	.81	
SU	Supervisory relationship, 8 Items average		3.34	.90	
NT	Role of the nurse teacher, 9 Items average		3.61	.81	

Table 2

Factor Loadings from Indonesian version of CLES+T: Principal Component Analysis Extraction with Promax Rotation, Pattern Matrix

Items	Factor			
	1	2	3	4
SU3 I continuously received feedback from my supervisor	0.943			
SU6 There was a mutual interaction in the supervisory relationship	0.908			
SU5 The supervision was based on a relationship of equality and promoted my learning	0.868			
SU4 Overall, I am satisfied with the supervision I received	0.858			
SU8 The supervisory relationship was characterized by a sense of trust	0.835			
SU7 Mutual respect and approval prevailed in the supervisory relationship	0.832			
SU1 My supervisor showed a positive attitude towards supervision	0.708			
SU2 I felt that I received individual supervision	0.597			
NT6C The nurse teacher and the clinical team worked together in supporting my learning		0.827		

Items	Factor			
	1	2	3	4
NT2T The teacher was capable of operationalising the learning goals of this clinical placement		0.783		
NT3T The nurse teacher helped me to reduce the theory-practice gap		0.778		
NT5C The nurse teacher was able to give his or her pedagogical expertise to the clinical team		0.777		
NT1T In my opinion, the nurse teacher was capable to integrate theoretical knowledge and everyday practice of nursing		0.717		
NT9R Focus on the meetings was in my learning needs		0.697		
NT7R The common meetings between myself, mentor and nurse teacher were comfortable experience		0.696		
NT8R In our common meetings I felt that we are colleagues		0.677		
NT4C The nurse teacher was like a member of the nursing team		0.656		
PED7 There were sufficient meaningful learning situations on the ward			0.856	
PED9 The ward can be regarded as a good learning environment			0.853	

Items	Factor			
	1	2	3	4
PED8 The learning situations were multi-dimensional in terms of content			0.848	
PED4 There was a positive atmosphere on the ward			0.659	
PED6 The staff learned to know the student by their personal names			0.616	
PED3 During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions			0.566	
PED2 I felt comfortable going to the ward at the start of my shift			0.474	
PED1 The staffs were easy to approach			0.457	*0.404
PED5 The staffs were generally interested in student supervision			0.433	
NOW1 The wards nursing philosophy was clearly defined				0.782
LVM4 The effort of individual employees was appreciated				0.715
NOW2 Patients received individual nursing care				0.711
NOW3 There were no problems in the information flow related to patients' care				0.622
NOW4 Documentation of nursing (e.g. nursing plans, daily recording of nursing procedures etc.) was clear				0.603

Items	Factor			
	1	2	3	4
LVM3 Feedback from the WM could easily be considered as a learning situation				0.535
LVM2 The WM was a team member				0.529
LVM1 The WM regarded the staff on her/his ward as a key resource				0.431
Eigenvalues	12.94	3.25	2.22	1.47
Percentage of variance	38%	10%	6%	4%

Note: Loadings in **bold** indicate the factor on which the item was placed.

*crossloading on a second factor

Table 3

Evidence of Reliability

Factor	Cronbach's alpha	Inter-Item Correlation Range	Corrected Item-Total Correlation Range	Squared Multiple Correlation Range	Cronbach's alpha if deleted Range
1: Supervisory relationship	.94	.51 to .83 Mean .66	.65 to .86	.45 to .78	.93 to .94
2: Role of the nurse teacher	.91	.35 to .73 Mean .53	.62 to .77	.44 to .66	.89 to .90
3: Pedagogical atmosphere	.87	.29 to .73 Mean .44	.52 to .72	.34 to .65	.85 to .87
4: Culture of the ward	.86	.21 to .64 Mean .43	.45 to .72	.27 to .57	.82 to .86

Inter-Item Correlation Matrix

[illegible]

[illegible]

[illegible]

[illegible]

Table 5

Comparison of four-factor models

Study	Factor 1	Factor 2	Factor 3	Factor 4	Variance	Cronbach's alpha	Comments
Current Study (34 items)	Supervisory relationship	Role of the nurse teacher	Pedagogical atmosphere	Culture of the ward	58%	.95	Factor 4 combined items from Leadership style of the ward manager and Premises of nursing on the ward
Croatia (30 items) Lovrić et al., 2016	Relationship mentor- student	Premises of nursing on the ward	Pedagogical atmosphere on the ward – staff	Pedagogical atmosphere on the ward – learning opportunities	71%	.97	Factor 1 combined items from Supervisory relationship, Role of the nurse teacher, and Leadership style of the ward manager. Factor 3 four items from

Study	Factor 1	Factor 2	Factor 3	Factor 4	Variance	Cronbach's alpha	Comments
							Pedagogical atmosphere.
							Factor 4, three items from Pedagogical atmosphere.
Austria (25 items) Mueller et al., 2018	Supervisory relationship	Leadership style of the ward manager	Competence based requirements	Pedagogical atmosphere	73%	.95	Did not include Role of the nurse teacher items. Factor 3 is items from Premises of nursing on the ward and two new items.
New Zealand (34 items) Watson et al., 2014	Connecting with and learning in communities of clinical practice	Role of the nurse teacher	Supervisory relationship	Leadership style of the ward manager (3 items)	58%		Factor 1 combined Pedagogical atmosphere, Premises of nursing on the ward, and one item from Leadership style of the ward manager