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EMPIRICAL MODEL OF CLINICAL LEARNING ENVIRONMENT AND MENTORING OF CULTURALLY AND LINGUISTICALLY DIVERSE NURSING STUDENTS

- **Short running title**

AN EMPIRICAL MODEL FOR CLINICAL LEARNING.

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EMPIRICAL MODEL OF CLINICAL LEARNING ENVIRONMENT AND MENTORING OF CULTURALLY AND LINGUISTICALLY DIVERSE NURSING STUDENTS

Abstract

Aims and Objectives: This study aimed to develop and test an empirical model of clinical learning environment and mentoring of culturally and linguistically diverse nursing students.

Background: Clinical learning is an essential part of nursing education; nursing students are required to master clinical competences and build a professional identity during their education. The global mobility of nurses requires high proficiency in cultural adaptability as well as the successful integration of cultural diversity into the healthcare system on a national level.

Design: The research design was a quantitative cross-sectional study. STROBE statement was used to enhance the quality and transparency of research.

Methods: Data were collected from eight universities during the 2015-2016. The analysis included data from 187 participants, collected using the CLES+T and CALDs scales. Instrument validity was tested with Confirmatory Factor Analysis, while the hypotheses were tested with a Structural Equation Model (SEM).

Results: Pedagogical atmosphere was shown to be positively related to cultural diversity (0.66), orientation into the clinical placement (0.54) and the role of the student (0.25), and all of these relationships were statistically significant. These dimensions – with the exception of

the role of the student - also showed a significantly positive influence on the mentoring relationship (respectively 0.32, 0.71, 0.18). Fit indexes demonstrate an adequate model's fit.

Conclusions: The model needs to be further piloted and tested in organizational structures of clinical practice of culturally and linguistically diverse nursing students. The dimensions that explain mentoring in clinical learning needed to be further addressed in a theoretically-consistent and empirically-driven approach, according to these findings.

Relevance to Clinical Practice: In our study we found that environmental and relational aspects are the most important for building an effective clinical learning environment. Universities and health care organizations can jointly leverage the model to foster clinical learning environments in clinical practice.

Key Words: Clinical learning environment, cultural and linguistic diversity, mentoring, nursing, student, empirical model testing

What does this paper contribute to the wider global community?

- Environmental and relational dimensions are the most important for building an effective clinical learning environment;
- Orientation in the clinical placement is a core dimension that can enhance the supervisory relationship;
- The acknowledgement of students´ cultural diversity is supported by a positive pedagogical atmosphere and it improves the mentoring relationship.
- Universities and health care organizations can jointly leverage the model to foster clinical learning environments in clinical practice.

Introduction

Nursing curricula have been significantly shaped by the politically-influenced educational strategies of the European Union (European Directive 2013/55/EU) as well as the rapid digital knowledge sharing spurred by globalization (Konttila et al., 2018). The implementation of the Bologna process among European countries (Bologna Process, 1999), Nordic Agreements of Higher Education (1996) among Scandinavian and Baltic state countries, UNESCO (2016) regulations of equal human rights for free education, and OECD (2016) work to align the quality and competitiveness of education with international standards are all recent examples of international agreements that have influenced nursing education. For example, numerous European Union member states have integrated internationalization steps – such as English language nursing degree programs and including cultural diversity in patient care – into their higher education institutions, with the final goal of broadening educational borders (Govern-

ment Programme 2015; Mikkonen et al, 2017b). Another strategic objective has been endowing nurses with competencies that will enable professional mobility across international borders (Davies, 2008). The global mobility of nurses requires high proficiency in cultural adaptability as well as the successful integration of cultural diversity into the healthcare system on a national level (Cutcliffe et al., 2011). Previous research has shown that cultural diversity in nursing education greatly benefits the professional and personal growth of future healthcare professionals (Grant and Mckenna, 2003; Green et al., 2008; Seibold et al., 2007), helps experienced healthcare staff better understand their own cultural heritage and take care of culturally diverse patients (Oikarainen et al., 2018), and creates culturally diverse learning environments (Mikkonen et al., 2016a, 2016b). On the other hand, integrating cultural diversity into nursing education creates challenges in terms of human rights of equality and fair treatment of students. These challenges manifest themselves as discrimination (Jeong et al., 2011; Mattila et al., 2010), limited learning possibilities (Mikkonen et al., 2017a), social isolation (Sedgwick et al., 2013) and low life satisfaction levels (Pitkäjärvi et al., 2012). By identifying areas that are crucial to clinical learning environments and mentoring through empirical model – and then integrating these into clinical practice – educational institutions can offer students better clinical practice experiences that will hopefully convince them to stay in the profession. These types of developments could reduce both national and international attrition rates in healthcare (Graham et al., 2016; Murray et al., 2016).

Background

Clinical learning is an essential part of nursing education; nursing students are required to master clinical competences (European Directive 2013/55/EU) and build a professional identity during their education (Eriksson et al., 2015). Furthermore, clinical practice represents a substantial part of nursing education; across Europe, nursing students spend between 33% and 55% of their time in clinical activities (Warne et al., 2010). The clinical learning environment is a complex network in which students, mentors and nurse teachers interact within organizational, teamwork and inter-professional settings (Flott and Linden, 2016; Saarikoski, 2017). The clinical learning environment – which offers authentic clinical experiences with real patients - allows students to build their clinical competence by connecting their cognitive reasoning and psychomotor skills (Sandars and Patel, 2015). Furthermore, this is the first setting in which nursing students begin to consider their identity in the nursing profession (Mikkonen et al., 2016a; Mikkonen et al., 2017b). To be effective, an educational approach must

take into account all the levels on which individuals interact within the clinical practice setting.

Based on recent research, clinical learning environment encompasses the following areas: pedagogical atmosphere, role of a student, orientation, mentoring relationship and cultural diversity (Mikkonen et al., 2017b). Pedagogical atmosphere includes a positive environment created in a team of nurses, which permits students to feel comfortable and accepted to take part in interprofessional work at their clinical placements (Mikkonen et al., 2017b; Saarikoski et al., 2008). Mattila et al. (2010) and Pitkäjärvi et al. (2012) have shown that a positive learning atmosphere created by staff team at clinical placements helped culturally and linguistically diverse students to minimize their language barriers. The role of the student is defined by their proactivity and commitment in clinical learning. According to the previous studies (Mikkonen et al., 2016b; San Miguel and Rogan, 2012), mentors emphasized that students' own role and attitudes influenced the nature of their learning and relationship building with mentors. When students enter clinical placements, mentors need to orientate students into the timetables, clinical routines, staff expectations and mentoring practices of the clinical placements (Tuomikoski et al., 2018). It was previously shown that constructive clinical orientation and reflection enhanced students' learning during clinical placements and helped students reduce anxieties and gain confidence in their professional growth (Mattila et al., 2010; Mikkonen et al., 2016a).

The clinical learning environment was shown to strongly correlate with mentoring practice in the organizational structure of clinical practice (Mikkonen et al., 2017a; Warne et al., 2010). Mentors are registered nurses who are involved in overseeing and conducting the clinical practice of nursing students (Tuomikoski et al., 2018). The mentor's role encompasses competencies in creating a safe and open learning environment (Oikarainen et al., 2018), enabling and guiding the student's learning process (Jokelainen et al., 2011; Tuomikoski et al., 2018), and strengthening students' nursing professionalism (Knox et al., 2014; Mikkonen et al., 2017a). Furthermore, mentors also encounter cultural and linguistic diversity on a daily basis, and this requires them to have cultural awareness, knowledge, and communication skills (Hagqvist et al., 2019), as well as be able to integrate cultural diversity into an open and safe learning environment (Mikkonen et al., 2017b; Oikarainen, 2018).

Multiple studies have found contradictory results when comparing nurse mentors' perceptions on their own mentoring competence (Mikkonen et al., 2017a; Oikarainen et al., 2018) with nursing students' perceptions of mentoring and the clinical learning environment

(Oikarainen et al., 2018). For instance, culturally diverse students reported that the current pedagogical atmosphere limits both their possibilities to learn diverse nursing competencies and ability to gain acceptance for their cultural diversity from staff (Mikkonen et al., 2017a). In contrast, mentors evaluated their competence in mentoring culturally diverse students at a highly satisfactory level (Oikarainen et al., 2018).

Methods

Aim

The aim of this study was to develop and test an empirical model of the clinical learning environment and mentoring of culturally and linguistically diverse nursing students.

Hypotheses

H1. Pedagogical atmosphere is positively related to cultural diversity in the clinical learning environment, orientation at the beginning of clinical practice and the role of the student;

H2. Cultural diversity in the clinical learning environment, orientation at the start of clinical practice and the role of the student positively influence the mentoring relationship.

Study design

The study employed a cross-sectional design. STROBE statement was used to enhance the quality and transparency of research (See Supplementary File 1).

Participants

All nursing students (N=664) undertaking English language degree programs from eight Finnish universities of applied sciences were invited to participate in the study. Out of the total of 329 participants, 231 were culturally and linguistically diverse students and 98 were national students studying for their degree in an English language degree program. Only culturally and linguistically diverse students were chosen for this study. According to the criteria for testing a Structural Equation Model (SEM) adopted in this secondary analysis, a total of 187 participants were eligible for this study. Participants with more than 5% of values missing (n=13) or recognized as multivariate outliers (n=31) were deleted in order to achieve the multivariate normality to properly perform a SEM.

Data collection and scales

Data were collected during the 2015-2016 academic year using two validated scales were used: Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T) (Saarikoski et al., 2008) and Cultural and Linguistic Diversity Scale (CALDs) (Mikkonen et al., 2017a). Additionally, demographic data and background variables on students´ clinical placements were collected.

Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T)

The CLES+T scale is widely used in educational research to evaluate clinical learning experiences during healthcare education (Carlson and Idvall, 2014; Mansutti et al., 2017; Riklikiene and Tichelaar, 2017). The scale includes 34 items and assesses the following five factors: pedagogical atmosphere (9 items); leadership style of the ward manager (4 items); nursing premises at the ward (4 items); supervisory (mentoring is used throughout this study) relationship (8 items) and the nurse teacher (9 items) (Saarikoski et al., 2008). Items are scored using a five-point Likert scale of agreement ranging from 1 (fully disagree) to 5 (fully agree). The overall Cronbach's alpha for the CLES+T scale was 0.96, and it varied from 0.84 to 0.91 across the tested factors.

Cultural and Linguistic Diversity Scale (CALDs)

The CALDs scale assesses the clinical learning environment with a specific emphasis on the cultural dimensions of learning and social integration of the student in the clinical setting. The scale integrates and upgrades CLES+T as it defines the factors that are involved in the clinical learning environment. CALDs includes 23 items divided across the following five factors: cultural diversity in the clinical learning environment (5 items); orientation into the clinical placement (4 items); role of the student (5 items); culturally diverse pedagogical atmosphere (4 items); and linguistic diversity in the clinical learning environment (5 items). Items are scored using a five-point Likert scale of agreement ranging from 1 (fully disagree) to 5 (fully agree) (Mikkonen et al., 2017a). The overall Cronbach's alpha for CALD was 0.89, with values ranging from 0.79 to 0.87 across factors.

Data Analysis

In the preliminary data analyses, data with over 5% of the values missing were removed by listwise deletion (Graham, 2009). Multivariate outliers were assessed by calculating Mahalanobis distances and their p-values in the chi-square distribution with 57 degrees of freedom, which was based on the number of items in the two scales. After listwise deletion of missing data and multivariate outliers, multivariate normality was tested using Mardia´s kur-

tosis index, i.e Mardia´s kurtosis lower than the critical value v*(v+2) (v=number of items) confirms multivariate normality (Lombardi and Pastore, 2012; Tabachnick and Fidell, 2006). In this study, Mardia´s kurtosis was 3122.80 while the critical value was 3363; hence, multivariate normality was verified.

Research hypotheses were tested by performing a Structural Equation Model (SEM) with the Full Imputation Maximum Likelihood (FIML) estimator. As a result, the correlations between factors – along with the respective statistical significance – were determined. Chi-square and fit indices (RMSEA, TLI, CFI, SRMR) were reported (Loehlin and Beaujean, 2016).

Preliminary analyses, reliability analyses and descriptive statistics were performed using IBM SPSS (V25.0) (IBM, 2017), while SEM and mediation analysis were performed using Stata (V12.0) (StataCorp., 2011).

Ethical considerations

Research permission was obtained from all of the eight participating organizations according to Finnish procedures of ethical conduct (Declaration of Helsinki 2013; Medical Research Act 488/1999, 295/2004, 794/2010). Personal data protection followed GDPR (2016) requirements (Information Commisioner's Office, 2018). Data confidentiality was ensured in the data collection and data analysis phases by reporting data without singling out one participants' data, not reporting organizations and not performing comparisons of the outcomes. Participants received an informational letter that explained data treatment and their freedom in choosing whether or not to participate in the study; this letter served the purpose of informed consent. The electronic data will be stored for 50 years in University of Oulu data protection folders. Data are only accessible with permission and through the data management plan procedures of the research group. Permission to use the CLES+T scale was requested and granted by the CLES+T scale developer Dr. Mikko Saarikoski.

Results

Participants

The mean age among participants was 28.2 years (SD ±6.86, median 26, min 18, max 51) with 65.2% (112/187) females. The mean duration of clinical placement among participants was 5.12 weeks (SD ±1.54, median 5, min 1, max 8), while 16% were first-year students (30/187), 36.9% were second-year students (69/187), 39% were third-year students (73/187), and 8% of the participating students were in their fourth year (8.0%). Of the participating

students, 42.8% reported themselves to be beginners in the Finnish language, while 54.0% (101/187) reported their Finnish language skills as intermediate/advanced. The remaining students – 3.2% - were native Finnish speakers with cultural and linguistic family background. Overall, 70.1% (121/187) of the sample rated their clinical learning experience as good/excellent, 20.9% felt the clinical learning experience to be (39/187) average and the remaining 9.0% (17/187) evaluated their clinical practice experience as poor or fair.

Empirical model testing

According to the theoretical premises of this study and model's fit indexes, the following factors were used to test the model: pedagogical atmosphere (6 items) and mentoring relationship (8 items) from the CLES+T scale; and cultural diversity in the clinical learning environment (5 items), orientation into the clinical placement (4 items) and role of the student (3 items) from the CALDs scale. All of these factors met the validity and reliability criteria when the scales were validated by Mikkonen et al. (2017a). Moreover, they explain most of the variance in the scales they belong to, which is also statistically consistent in that EFA aims to explain as much variance as possible with the smallest number of factors (Costello and Osborne, 2005). More specifically, pedagogical atmosphere and mentoring relationship explain 51.2% of the total variance (68.3%) in the CLES+T scale, while cultural diversity in the clinical learning environment, orientation into the clinical placement, and role of the student explain 56.7% of the total variance (67.7%) in the CALDs scale (Mikkonen et al., 2017a). The cut-off to exclude other factors from CLES+T and CALDs was that a factor explains <8% of the total variance in its respective scale; this was based on findings from a meta-analysis that identified 8% as the minimum variance that a factor should explain (Costello and Osborne, 2005). More precisely the excluded factors from CLES+T scale were Role of the nurse teacher; Leadership style of the ward manager; and Nursing care on the ward; and from CALDs- Culturally diverse pedagogical atmosphere; and Linguistic diversity. Additionally, the items from factor role of student from the CALDs scale, "I made an effort to learn in the clinical placement" and "I made an effort to speak the native language to patients" were removed from the model because, theoretically, they were more closely aligned with prevention-oriented proactivity than promotion-oriented proactivity (e.g. "I showed initiative in my own learning in the clinical practice") (Spychala and Sonnentag, 2011). Removing of items from the model improved the fit indexes of the model.

Empirical model of the clinical learning environment and mentoring

Pedagogical atmosphere was found to be positively related to the cultural diversity (0.66), orientation into the clinical placement (0.54) and role of the student (0.25) factors. All of these correlations were found to be statistically significant (p<0.001). These three factors were also positively related to the mentoring relationship; however, the correlation between the role of the student and mentoring relationship was not statistically significant (p=0.194). The correlation between cultural diversity and mentoring relationship was 0.32 (p<0.001) while the correlation between orientation into the clinical placement and mentoring relationship was 0.71 (p<0.001). Furthermore, the model´s fit indices were adequate, i.e. chi-square=4422.847 (p<0.001), RMSEA=0.080, SRMR=0.078, CFI=0.913, TLI=0.904. Table 1 report the correlations between factors along with the fit indices. Table 2 reports the items used to measure the five factors included in the presented empirical model. Figure 1 represents the empirical model.

Discussion

The presented empirical model challenges previous, more traditional theoretical assumptions of the clinical learning environment in nursing education. The environmental factors involved in clinical learning are pivotal to fostering a successful mentoring relationship between mentor and student. The role of the student – along with their proactivity in learning – was found to be weakly related to a successful mentoring relationship, and this correlation was not statistically significant.

The presented findings highlight that while the pedagogical atmosphere enhances a student's freedom to adopt proactive behaviors in learning, the role of the student does not significantly contribute to a better mentoring relationship. According to our interpretation, the mentoring relationship is more important than the individual student role in influencing clinical learning outcomes. In other words, the clinical learning environment fosters the role of the student but the student-mentor relationship is more important than individual attitude to achieving successful learning. This agrees with previous research, which has found that group-level organizational factors are more important in the clinical learning environment than individual-level factors (Tomietto et al., 2016). Clinical learning is part of the process during which students adapt to an organizational context; in this way, a student is supposed to adopt some proactive behaviors to seek information that will be useful for his/her learning (Tomietto, 2018). Nevertheless, our finding that building a meaningful mentoring relationship is the most important

factor to a successful clinical learning experience demonstrates that clinical learning is a relational phenomenon (Nifadkar and Bauer, 2016). Furthermore, in our study the mean age of participants is 28.2 years and they are not "typical" nursing students. Due to this they could have previous work experiences. They could be more sensitive to the organizational environment and more aware of the importance of relational factors in adjusting.

The model highlights the importance of pedagogical atmosphere in the provision of an optimal clinical learning environment. For this reason, building organizational premises that will foster a positive pedagogical atmosphere is the main challenge for nurse managers. Work engagement has previously been identified as a core motivational factor for building a good clinical learning environment (Tomietto et al., 2016). Furthermore, ward managers can positively influence nurses´ motivation, organizational outcomes and the clinical learning environment in the ward. Even though ward managers contribute to building the organizational environment in which the clinical learning environment is embedded, the factor of CLES+T scale concerning ward managers' leadership styles was removed from the empirical model because it explained a low percentage of the total variance in the scale. We argue that the role of ward manager in Finland – at least as perceived by students - does not exert strong hierarchical pressure on the clinical learning environment (Pitkänen et al., 2018), but other factors, such as the mentoring relationship or the pedagogical atmosphere, are pivotal in driving the clinical learning environments' quality. The ward manager has an essential role in creating an open organizational climate within clinical practice. In this way, the ward manager does not have a minimal role in clinical practice, but their functions have more noticeable impacts at other organizational levels.

A good pedagogical atmosphere also enhances the orientation for the student; orientation into clinical practice is not a mentor-student issue but a group-level responsibility. For example, a good pedagogical atmosphere translates into a better orientation experience and leads to a more effective mentoring relationship. According to organizational socialization research, this is relevant for how a new student adjusts into the clinical placement. The provision of information that is necessary for this adjustment fosters better organizational socialization and a more effective relationship with the team (Taormina, 2004; Tomietto et al., 2015).

Previous research has also shown that a good pedagogical atmosphere cultivates openness to cultural diversity and, as such, enhances the mentoring relationship (Graham et al., 2016). Even though this research addresses cultural diversity among nursing students, it is important

to state that cultural diversity should not be the only issue that nurses consider when mentoring culturally diverse students. In a wider perspective, cultural diversity also includes the social inclusion of students into the clinical setting (Mikkonen et al., 2016a; Oikarainen et al., 2018), and this could be a relevant concept to consider when planning how students will adjust to the clinical setting.

Several factors from scales were excluded from the presented empirical model based on the previous EFA and current SEM model testing. The first choice was to exclude the "role of nurse teacher" factor, which describes how nurse teachers integrate theory and practice, as well as have an active role in maintaining the relationship between student, mentor and teacher (Mikkonen et al., 2017a). The role of the nurse teacher has changed in the context of their involvement in the clinical education of nursing students (Warne et al., 2010). According to the latest evidence, healthcare educators, including nurse teachers, reported that their role in mentoring clinical placement students had diminished due to the limited resources of higher education institutions (Mikkonen et al., 2019). For example, several studies have shown that digital technology can effectively replace the face-to-face presence of nurse teacher in clinical practice (Strandell-Laine et al., 2018). However, nursing students also emphasized that digital technology cannot completely replace nurse teachers' participation in clinical practice, and this was especially relevant when the students faced challenges (Heinonen et al., 2019). The students expressed that the use of digital technology put them in a vulnerable position, as they were not able to share their true clinical practice experiences with nurse teachers via the provided technology (Heinonen et al., 2019).

The other factor that was excluded was the "premises of nursing" factor. This choice was motivated by a statistical evaluation of the EFA from the previous study (Mikkonen et al., 2017a) and theoretically consistent with the model as well as the scales´ core factors. Both the scales and the model are relationally focused, i.e. they describe how the relationship between the environment, the mentor and the individual student promote learning.

Limitations/Strengths

This study provides new knowledge about the dynamics involved in nursing education and designing clinical learning for culturally diverse students in Finland. Theoretically, the model is useful for also understanding native students´ needs to optimize the clinical learning experience. A wider sample that also includes native students would be useful for further testing the model and confirming its relevance to nursing education. Moreover, international data of

nursing students' clinical practice experiences could provide rich evidence concerning the generalizability of the empirical model to clinical practice.

The model was able to identify several core factors that are linked to the clinical learning environment for culturally and linguistically diverse students. These factors belong to two different scales (CLES+T and CALDs) that have previously been psychometrically validated. Due to rapid changes in the organizational structure of clinical practice (Warne et al., 2010) – for example the changing role of the nurse teacher (Mikkonen et al., 2017b; Saarikoksi et al., 2008) – the instruments CLES+T and CALDs need to be further updated.

Conclusions

The presented empirical model of the clinical learning environment and mentoring provides strong evidence for the state of the current clinical practice of nursing students. The model identifies several relationships that are essential for the provision of successful clinical practice experiences. In addition, interventional studies based on the presented model could provide empirical evidence for how the clinical learning environment affects student learning and building a professional identify. Cultural diversity should be further tested in studies that involve national nursing students to determine its importance in student learning in a wider perspective. Finally, we suggest a further study that would examine mentors' competence and role in the clinical learning environment. This type of study could strengthen the functionality of the empirical model in developing evidence-based clinical practice approaches that are optimized for both national and culturally and linguistically diverse nursing students.

Relevance to clinical practice

In our study we found that environmental and relational aspects are the most important for building an effective clinical learning environment. The model highlights the importance of pedagogical atmosphere in the provision of an optimal clinical learning environment. For this reason, building organizational premises that will foster a positive pedagogical atmosphere is the main challenge for nurse managers. Universities and health care organizations can jointly leverage the model to foster clinical learning environments in clinical practice. The model needs to be taken into consideration when defining the clinical learning environment in which culturally diverse students will learn and develop professionally.

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Table 1. Empirical model's parameters estimation and statistical tests.

Outcome variable	Explanatory variable	Parameter	Standard Error	z-test	p-value
Cultural Diversity <-	Pedagogical Atmosphere	0.66	0.087	7.60	**<0.001**
Orientation <-	Pedagogical Atmosphere	0.54	0.070	7.69	**<0.001**
Role of the Student <-	Pedagogical Atmosphere	0.25	0.046	5.33	**<0.001**

Mentoring Relationship <-	Cultural Diversity	0.32	0.082	3.88	**<0.001**
	Orientation	0.71	0.117	6.01	**<0.001**
	Role of the Student	0.18	0.142	1.30	0.194

Structural Equation Model (SEM) with the Full Imputation Maximum Likelihood (FIML);

p-value < 0.05 (marked in bold)

Table 2. The items remaining in CLES+T and CALDs after confirmatory factor validation.

Factors and Items representing empirical model of the study

PEDAGOGICAL ATMOSPHERE (CLES+T)

1. I felt comfortable going to the ward at the start of my shift (CLES+T Q10)

2. The staff was easy to approach (CLES+T Q9)

3. There was a positive atmosphere on the ward (CLES+T Q12)

4. During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions (CLES+T Q11)

5. The staff was generally interested in student supervision (CLES+T Q13)

6. The staff learned to know the student by their personal names (CLES+T Q14)

THE CONTENT OF SUPERVISORY (MENTORING) RELATIONSHIP (CLES+T)

7. The supervision was based on a relationship of equality and promoted my learning (CLES+T Q 5)

8. Mutual respect and approval prevailed in the supervisory relationship (CLES+T Q7)

9. There was a mutual interaction in the supervisory relationship (CLES+T Q6)

10. The supervisory relationship was characterized by a sense of trust (CLES+T Q8)

11. Overall I am satisfied with the supervision I received (CLES+T Q4)

12. My supervisor showed a positive attitude towards supervision (CLES+T Q1)

13. I felt that I received individual supervision (CLES+T Q2)

14. I continuously received feedback from my supervisor (CLES+T Q3)

CULTURAL DIVERSITY IN THE CLINICAL LEARNING ENVIRONMENT (CALDs)

15. I did not experience discrimination on the ward

16. I did not feel socially isolated on the ward

17. I was not stressed at the clinical placement because I have a different cultural background

18. I did not have to try to prove my competence in nursing because of my cultural background

19. My cultural background did not limit my learning opportunities

ROLE OF THE STUDENT (CALDs)

20. I showed initiative in my own learning in the clinical placement

21. I was determined to learn even if I experienced challenges on the ward

23. I showed commitment to working schedules of the ward

ORIENTATION INTO THE CLINICAL PLACEMENT (CALDs)

24. I was introduced to the ward routines in the beginning of my clinical placement

25. I had a well-planned orientation on the ward

26. I knew what was expected of me on the ward

27. I was given enough time to learn routines on the ward

Likert scale from 1 – fully disagree – to 5 – fully agree

The items of CLES+T scale 'reprinted from International Journal of Nursing Studies, Vol. 45, Issue 8, Mikko Saarikoski, Hannu Isoaho, Tony Warne, Helena Leino-Kilpi, The nurse teacher in clinical practice: developing the new sub-dimension to the clinical learning environment and supervision (CLES) scale, pp. 1235–1236, Copyright (2016), with permission from Elsevier.'
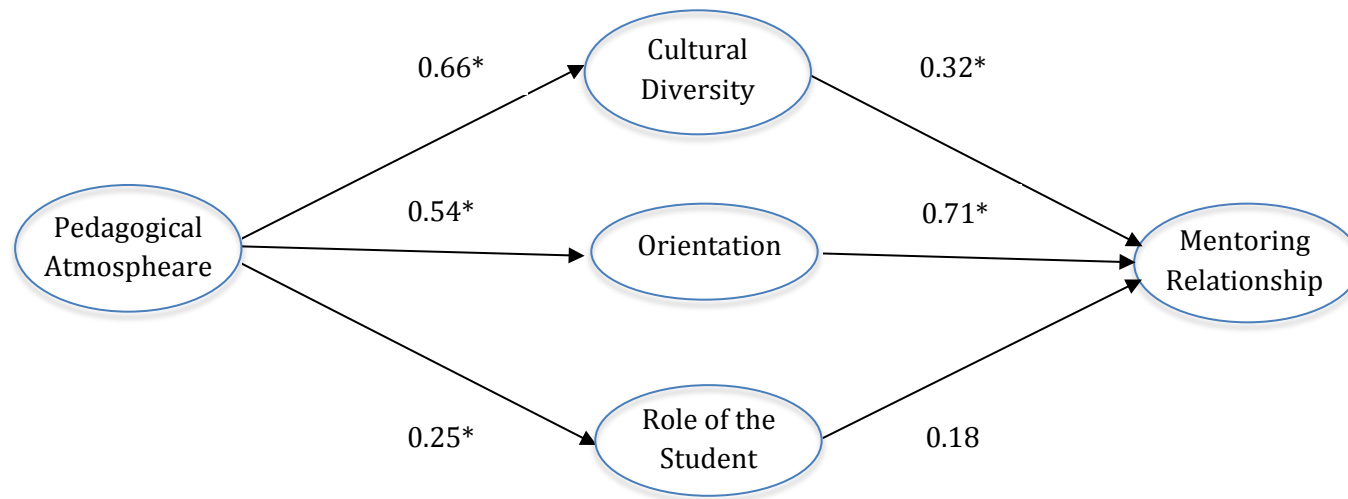
Figure 1. Structural Equation Model.

Footnote: Latent variables and parameters by performing Structural Equation Model (SEM) with the Full Imputation Maximum Likelihood (FIML) estimation; * statistical significance <0.001