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Factors Affecting the Clinical Competency of Nursing Students in Pediatric Nursing Clinical Practice

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Abstract

Background/Objectives: This study aims to investigate the effects of clinical training stress and clinical training satisfaction on clinical competency during pediatric nursing training in nursing students.

Methods/Statistical analysis: Ninety-one nursing students participated in this study, and data were collected from May 29 to November 10, 2017. The collected data were analyzed using SPSS 22.0.

Findings: This study found that clinical competency had a significant negative correlation with clinical training stress ($r = -.356$, $p < .001$) and a significant positive correlation with clinical training satisfaction ($r = .524$, $p < .001$). Clinical training satisfaction ($\beta = .439$, $p < .001$) and conflict with pediatric patients, a component of clinical training stress ($\beta = -.226$, $p = .019$), were identified as factors having significant effects on clinical competency during pediatric nursing clinical training.

Improvements/Applications: It is important to plan clinical training while considering the factors affecting it to enhance nursing students' clinical competency during pediatric nursing clinical training.

Keywords: *Nursing students, Clinical practice stress, Clinical practice satisfaction, Clinical competency, Pediatric nursing clinical practice*

Introduction

Clinical practice is a crucial component in cultivating nursing professionals, in that it is a learning process that fosters students' creativity and practical abilities by applying theoretical education to clinical practice [1]. However, the stress students accumulate during clinical training diminishes their interest in clinical training and reduces their learning abilities, ultimately undermining their clinical competency [2]. Many studies have reported the effects of stress and satisfaction with clinical training in all disciplines on clinical competency, which may differ from pediatric nursing training, where the needs and coping skills may differ according to the stage of development [3]. Even though pediatric nursing training has more restrictions than other nursing training programs [4], only a handful of studies have examined pediatric nursing training.

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Thus, this study aims to investigate the effects of stress and satisfaction with pediatric nursing training on clinical competency in nursing students to provide baseline data for enhancing the clinical competency of nursing students who provide care for pediatric patients. [8]

Method

1. *Study design*

This study is a descriptive correlational study investigating the effects of stress and satisfaction with pediatric nursing training on clinical competency in nursing students.

2. *Participants*

Ninety-two nursing students undergoing pediatric nursing training who provided informed consent to participate were enrolled in this study. The minimum sample size was calculated using the G*Power 3.1.9.2

software. With a moderate effect size of .15, significance level of .05, and power of .90 for two variables for multiple regression, the required sample size was calculated to be 88. After excluding one questionnaire considered inappropriate, questionnaires from 91 (98.9%) participants were included in the final analysis.

3. *Research variables*

3.1. Clinical practice stress

Clinical training stress was assessed using the clinical training stress scale developed by Beck and Srivastava (1991) [3] and modified and adapted by Kim and Lee (2005) [5] for use in pediatric nursing training. This 24-item tool comprises five domains: Training and educational environment (5 items), inappropriate role models (6 items), burden of training work (4 items), interpersonal conflict (4 items), and conflict with patient (5 items). Each item is rated on a 5-point Likert scale, with a higher score indicating a higher level of clinical training stress. The Cronbach's alpha in Kim and Lee's (2005) [5] study was .91, and that in our study was .96.

3.2. Clinical practice satisfaction

Clinical training satisfaction was assessed using the clinical training satisfaction scale developed by Cho and Kang (1984) [6] and modified and adapted by Lee et al. (2004) [7] for use in pediatric nursing training. This 31-item tool comprises six domains: Courses (3 items), content (6 items), guidance (9 items), circumstances (7 items), hours (3 items), and evaluation (3 items). Each item is rated on a 5-point Likert scale, with negative-worded items reverse scored, and a higher score indicates a higher level of satisfaction with clinical training. The Cronbach's alpha in Lee et al.'s (2004) [7] study was .89, and that in our study was .92.

3.3. Clinical competency

Clinical competency was assessed using the scale of nursing performance developed by Schwirian (1978) [8] and modified and adapted by Choi (2005) [9] for use in pediatric nursing training. This 45-item tool comprises five domains: Comprehensive nursing (11 items), nursing skills (11 items), teaching/collaboration (8 items), interpersonal relationships/communication (6 items), and professional development (9 items). Each item is rated on a 5-point Likert scale, with a higher score indicating a higher level of clinical competency. The Cronbach's alpha in Choi's (2005) [9] study was .92, and that in our study was .94.

4. *Survey method*

The study was conducted from May 29 to November 10, 2017, and the participants were informed about the purpose and procedure of the study and the guarantee of anonymity and confidentiality. After guaranteeing that the collected data would be used only for research purposes, written consent was obtained and the participants were informed that the collected data can be withdrawn at any time without any disadvantages.

5. *Data analysis method*

The collected data were analyzed using the IBM SPSS 22.0 software according to the following analyses:

1) Participants' general characteristics, clinical training stress, clinical training satisfaction, and clinical training competency were analyzed with descriptive statistics.

2) Correlations among participants' clinical training stress, clinical training satisfaction, and clinical competency were analyzed using Pearson's correlation coefficients.

3) The factors that affect clinical competency were identified using stepwise multiple regression analysis.

Result

1. *Differences in variables by general characteristics*

As shown in Table 1, the mean age was 21.8 years, and the majority of the participants were female (n = 82). Altogether 51 participants were third-year students undergoing clinical training in the nursery, while 40 participants were fourth-year students undergoing clinical training in the pediatric ward.

Clinical training stress was significantly higher among fourth-year students, while clinical training satisfaction was significantly higher among third-year students. However, there were no significant differences in clinical competency according to grade level. There were no statistically significant differences in the study variables by sex. The mean clinical training stress score was 2.25 (0.57), and the mean clinical training satisfaction score was 3.81 (0.56). The mean clinical competency score was 3.98 (0.53).

Table 1. Differences in variables by general characteristics (*n* = 91)

Characteristics	Categories	N(%) or Mean(SD)	Clinical practice stress		Clinical practice satisfaction		Clinical competency	
			M (SD)	t(p)	M(SD)	t(p)	M(SD)	t(p)
Gender	Male	9(9.9)	2.02 (0.48)	−1.26(.21)	3.92(0.53)	0.63 (.53)	4.11(0.59)	0.80(.43)
	Female	82 (90.1)	2.27 (0.58)		3.80(0.57)		3.96(0.53)	
Year of study	Third	51 (56.0)	2.04 (0.54)	-4.18 (< .001)	3.93(0.51)	2.22(.03)	4.06(0.52)	1.76(.08)
	Fourth	40 (44.0)	2.51 (0.51)		3.67(0.60)		3.87(0.53)	
Age (years)	-	21.8 (0.87)	2.25(0.57)		3.81(0.56)		3.98(0.53)	

2. *Levels of clinical practice stress, clinical practice satisfaction, and clinical competency*

The mean scores for each domain for each variable are shown in Table 2.

Table 2. Levels of clinical practice stress, clinical practice satisfaction, and clinical competency (*n* = 91)

Variables		Min.	Max.	Mean	SD
Clinical practice stress	Environment for clinical practice	1.00	4.60	2.91	0.79
	Inappropriate role models	1.00	4.00	2.24	0.69
	Burden of clinical practice activity	1.00	4.50	2.62	0.74
	Interpersonal conflicts	1.00	4.00	1.76	0.67
	Conflicts with children patients	1.00	3.20	1.68	0.65
Clinical practice satisfaction	Courses	1.67	5.00	4.06	0.77
	Content	2.33	5.00	3.55	0.51
	Guidance	2.22	5.00	3.82	0.75
	Circumstances	2.14	5.00	3.80	0.67
	Hours	1.67	5.00	3.95	0.85
	Evaluation	2.33	5.00	3.95	0.75
Clinical competency	Comprehensive nursing	2.91	5.00	3.97	0.53
	Nursing skills	2.27	5.00	3.97	0.60
	Teaching/collaboration	2.25	5.00	3.87	0.72
	Interpersonal relationship/ communication	2.33	5.00	3.97	0.69
	Professional development	2.78	5.00	4.09	0.62

3. Correlations among clinical practice stress, clinical practice satisfaction, and clinical competency

Clinical competency is significantly correlated with clinical practice stress ($r = -.356$, $p < .001$) and with clinical practice satisfaction ($r = .524$, $p < .001$), as shown in Table 3.

Table 3. Correlations among clinical practice stress, clinical practice satisfaction, and clinical competency (n = 91)

Variables	1 r(p)	2 r(p)
Clinical competency1	1	
Clinical practice stress2	−.356(< .001)	1
Clinical practice satisfaction	.524(< .001)	−.542(< .001)

4. *Influencing factors of clinical competency*

Stepwise multiple regression analysis was performed with clinical competency as the dependent variable and the domains of clinical training satisfaction and clinical training stress as the independent variables to examine the explanatory power of the factors related to clinical competency. The Durbin-Watson statistic was 1.93, confirming no problem of autocorrelation. Tolerance was above 0.1 (0.857), and the variance inflation factor (VIF) was below 10 (1.167), confirming that there was no problem of multicollinearity.

As a result of the regression analysis, the model of the regression equation was appropriate (F = 20.606, p < .001), and the explanatory power of the model was 30.3%. The factors affecting clinical competency during pediatric nursing clinical practice were clinical practice satisfaction (**β** = .439, p < .001) and conflicts with patient children as a sub-factor of clinical practice stress (**β** = −.226, p = .019), as shown in Table 4.

Table 4. Factors influencing clinical competency (*n* = 91)

Variables	B	SE	β	t	p
Constant	2.700	.414		6.526	<.001
Clinical practice satisfaction	.416	.090	.439	4.617	< .001
Conflicts with children patients	−.185	.078	−.226	−2.383	.019
Adj. RI = .303, F = 20.606, p < .001					

Discussion

This study aimed to examine the effects of stress and satisfaction with pediatric nursing training on clinical competency in nursing students.

Stress during pediatric nursing training was significantly higher among fourth-year students, while satisfaction with training was significantly higher among third-year students. Considering that clinical stress tends to decline while satisfaction increases as students advance in years of study, our results seem to be attributable not to the difference in years of study but to the difference in the unit where the pediatric nursing training occurs, as third-year students undergo training in the nursery unit while fourth-year students undergo training in the pediatric ward.

The mean clinical training stress score was 2.25, which was lower than that found in Kim et al. [10] (3.16), Kim et al. [5] (3.33), Lee et al. [11] (3.49), and Yang [12] (3.6). Although these studies examined the entire clinical training experience, we limited our study to pediatric nursing training. In our study, satisfaction was the greatest with the courses, suggesting that clinical training involving pediatric patients is less stressful than caring for adult patients. Regarding the mean score for each domain, the score for clinical training environment was the highest and that for conflicts with pediatric patient was the lowest, which was consistent with the results of Yang [12]. Because environment is a major factor contributing to stress [13], clinical training environments should be improved to lower students' stress.

The mean score for clinical training satisfaction was the highest for courses and lowest for content. The high satisfaction with courses is consistent with the finding of Lee et al. [7], and the low satisfaction with content (caring for children) is consistent with the results of Lee et al. [7], Kim et al. [14], and Lee [15]. Therefore, to enhance the content of clinical training, it is necessary to provide opportunities for students to perform problem-focused nursing, as opposed to simple and functional activities.

There were no statistically significant differences in clinical competency during pediatric nursing training according to sex. There were both reports that male students show higher clinical competency than female students [16-18] and that there are no differences by sex [10,19]. Our results may be influenced by children's familiarity with female students, but further studies are needed of sex-specific differences in clinical competency. In terms of the domains of clinical competency, professional development was rated the highest, which is consistent with previous findings [9,16-17,19]. However, unlike previous studies, where comprehensive nursing was rated the lowest [9,16-17,19], teaching/collaboration was rated the lowest in our study. This seems to reflect the recent advances in the clinical teaching environment, whereby comprehensive nursing is faithfully applied.

Clinical competency during pediatric nursing training had a significant negative correlation with clinical training stress and a significant positive correlation with clinical training satisfaction; clinical training stress and clinical training satisfaction were significantly negatively correlated. This suggests that students demonstrate increased clinical competency with decreasing clinical training stress and increasing clinical training satisfaction during pediatric nursing training, which is in line with previous findings [9,20].

In our study, stress from conflict with pediatric patients and clinical training satisfaction during pediatric nursing training were identified as factors that affect clinical competency, and they explained 30.3% of the variance. This suggests that methods to lower stress while boosting satisfaction should be included in measures to promote clinical competency during pediatric nursing training.

Conclusion

The goal of clinical nursing training is to boost nursing students' clinical competency, so clinical training is a core component of nursing education. Nursing students' stress and satisfaction with clinical training transcend the psychological dimension; they show how supportive the training environment and role have been, and a quality clinical training experience helps students demonstrate their competent in the corresponding nursing practice following the completion of education.

Our findings showed that lowering stress and increasing satisfaction during pediatric nursing training are an important target to promote clinical competency, so subsequent studies should examine this in relation to various forms of training education

Ethical Clearance: Not required

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Conflict of Interest: Nil

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