



RESEARCH ARTICLE



The Relationship Between Patient Safety Competence and Clinical Care Self-Efficacy in Nursing Students

Hemşirelik Öğrencilerinde Hasta Güvenliği Yetkinliği ile Klinik Bakım Öz-Yeterliliği Arasındaki İlişki

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ABSTRACT

This study aimed to examine the relationship between patient safety competence and clinical care self-efficacy among nursing students. This cross-sectional correlational study included 284 nursing students with clinical practice experience. Patient safety competence was assessed within the domains of knowledge, skills, and attitudes, while clinical care self-efficacy was evaluated on the basis of the perceived self-efficacy dimension of the Self-Efficacy for Clinical Evaluation Scale. Descriptive statistics, independent-samples t test, one-way analysis of variance, Pearson correlation analysis, and multiple linear regression analysis were used. The mean patient safety competence score was 4.06 ± 0.48 and the mean clinical care self-efficacy score was 3.74 ± 0.57 . A moderate positive correlation was found between the two variables ($r = .38$, $p < .001$). Students who had received patient safety education had higher scores for both variables. Clinical care self-efficacy also differed significantly according to year of study and duration of clinical practice experience. In the regression model, patient safety competence was the strongest predictor of clinical care self-efficacy ($\beta = .34$, $p < .001$). Stronger knowledge, skills, and attitudes regarding patient safety were associated with greater perceived self-efficacy in clinical care. Nursing curricula should strengthen practice-based educational strategies integrating patient safety and clinical care competence.

ÖZET

Bu çalışmada hemşirelik öğrencilerinin hasta güvenliği yetkinliği ile klinik bakım öz-yeterliliği arasındaki ilişki incelenmiştir. Kesitsel ve ilişkisel nitelikteki araştırma, klinik uygulama deneyimi bulunan 284 hemşirelik öğrencisiyle yürütülmüştür. Hasta güvenliği yetkinliği, bilgi, beceri ve tutum boyutlarını kapsayan Hasta Güvenliği Yetkinliği Öz Değerlendirme Aracı; klinik bakım öz-yeterliliği ise Klinik Değerlendirme için Öz-Yeterlilik Ölçeği'nin algılanan öz-yeterlilik boyutu kullanılarak değerlendirilmiştir. Verilerin analizinde tanımlayıcı istatistiklerin yanı sıra bağımsız örneklem t testi, tek yönlü varyans analizi, Pearson korelasyon analizi ve çoklu doğrusal regresyon analizi kullanılmıştır. Öğrencilerin hasta güvenliği yetkinliği puan ortalaması 4.06 ± 0.48 , klinik bakım öz-yeterliliği puan ortalaması 3.74 ± 0.57 'dir. İki değişken arasında pozitif yönde orta düzeyde anlamlı ilişki saptanmıştır ($r = 0.38$; $p < 0.001$). Hasta güvenliği eğitimi alan öğrencilerin her iki değişkene ilişkin puanları daha yüksek bulunmuştur. Klinik bakım öz-yeterliliği ayrıca sınıf düzeyi ve klinik uygulama deneyimine göre anlamlı farklılık göstermiştir. Regresyon analizinde hasta güvenliği yetkinliği klinik bakım öz-yeterliliğinin en güçlü yordayıcısıdır ($\beta = 0.34$; $p < 0.001$). Hasta güvenliğine ilişkin bilgi, beceri ve tutumların güçlenmesi, öğrencilerin klinik bakım uygulamalarını gerçekleştirebilme konusundaki öz-yeterlilik algılarıyla ilişkilidir. Hemşirelik eğitiminde hasta güvenliği ile klinik bakım yeterliliğini bütünleştiren uygulamalı eğitim yaklaşımlarının güçlendirilmesi önerilmektedir.

Anahtar Sözcükler: Hasta güvenliği, öz yeterlik, klinik bakım, hemşirelik öğrencileri

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1. Introduction

Patient safety is one of the basic elements that determine the quality of health care. Reducing preventable harm during care depends not only on the safety systems used by health institutions but also on the knowledge, skills and attitudes of health professionals who provide care. Nurses have a particular responsibility in this process because they continuously monitor patients, directly carry out a large part of care interventions and are expected to recognize changes in a patient's condition at an early stage. Competencies required for safe care therefore cannot be left until after graduation; they need to be developed during nursing education (Bianchi, Bressan, Cadorin, Pagnucci, Tolotti and Valcarenghi, 2016; Svitlica, Šajnović, Simin, Ivetić and Milutinović, 2021).

During clinical education, nursing students take part in many practices that directly concern safety, ranging from medication administration and infection prevention to patient identification and fall-risk assessment (Vaismoradi, Tella, Logan, Khakurel and Vizcaya-Moreno, 2020). Theoretical knowledge about these practices is necessary, but it is not enough by itself. Students also need to translate that knowledge into appropriate clinical behavior and to regard safety as a priority in care. For this reason, patient safety competence should be considered through its knowledge, skills and attitude components together (Glarcher and Vaismoradi, 2025). The Patient Safety Competency Self-Evaluation Tool for Nursing Students developed by Lee, Lee, Peters and Gwon (2020) follows this three-component approach. Its Turkish validity and reliability study was conducted by Eskici, Kanig, Ugur and Seren (2021).

When nursing students do not have an adequate level of patient safety competence, this may increase the risk of errors in clinical practice and may also make it more difficult for safe care behaviors to become part of professional practice (Mihdawi, Al-Amer, Darwish, Randall and Afaneh, 2020). Studies from different countries have reported areas in which students' patient safety competencies still need improvement. Huang, Shen, Chen, He, Huang and Li (2020) showed that patient safety competence among nursing students varied according to educational and clinical characteristics. Studies from Türkiye similarly indicate that patient safety competence remains an area that should be strengthened in nursing education (Fırat Kılıç and Cevheroğlu, 2023; Balat Çalbay and Özbay, 2025). In this respect, patient safety is better viewed as a competence extending across different stages of clinical education rather than as content confined to a single course.

Providing clinical care safely requires students not only to know what should be done but also to believe that they can carry out the relevant care behavior. Bandura (1997) defines self-efficacy as a person's belief in their capacity to perform the behaviors required for a particular task. For nursing students, this belief is closely related to whether knowledge and skills learned during education can be used in the clinical setting (Shorey and Lopez, 2021). Students with stronger self-efficacy may also be more willing to persist when they encounter difficult clinical situations rather than withdraw from practice (Xie, Zhu, Zhang, Jiang, Wang and Liu, 2024).

One instrument used to assess self-efficacy in clinical care is the Self-Efficacy for Clinical Evaluation Scale (SECS), developed by Clark, Owen and Tholcken (2004). The scale evaluates perceived self-efficacy in caring for people with chronic illnesses as well as the importance students attach to these care skills. Zengin, Pınar, Çil Akıncı and Yıldız (2014) examined its psychometric properties in Turkish nursing students and reported high internal consistency for the perceived self-efficacy dimension. In the same study, self-efficacy scores differed according to academic achievement, which is noteworthy in showing that clinical care self-efficacy is related to students' educational gains.

The importance of self-efficacy in clinical education is not limited to academic achievement. Students' anxiety in the clinical environment, their participation in care and the extent to which they see themselves as capable of performing clinical procedures are also related to this construct. Mutlu, Azak and Kalaycı (2020) reported that general self-efficacy decreased as clinical anxiety increased, whereas students who felt more comfortable in the clinical setting perceived themselves as more competent in practice. Similar relationships have been reported among practicing nurses. Abu Sharour, Bani Salameh, Suleiman, Subih, EL-hneiti, AL-Hussami, Al Dameery and Al Omari (2022) found a positive relationship between self-efficacy and nurse-patient interaction, while Bu, Ma, Zhai, Ma and Xu (2022) reported an association between self-efficacy and nurses' humanistic practice ability.

Patient safety competence and clinical care self-efficacy meet at this point. Safe care requires recognition of clinical risk, selection of an appropriate intervention, correct performance of that intervention and monitoring of its outcomes. Having the knowledge and skills to do these things is important, but so is the student's perception that they are capable of carrying them out. At the same time, high self-efficacy alone

cannot be taken to mean that care is safe. A student's confidence in their own ability needs to be considered together with their knowledge, skills and attitudes related to patient safety.

Although patient safety competence and clinical self-efficacy have each been examined in the literature, studies directly addressing the relationship between these two constructs in nursing students are limited. Examining this relationship may help clarify the extent to which students' perceptions of competence in clinical care vary together with their patient safety competence. This study therefore aimed to examine the relationship between patient safety competence and clinical care self-efficacy among nursing students. It also examined whether the two variables differed according to gender, year of study, receipt of patient safety education, witnessing a medical error and clinical practice experience, and investigated the variables predicting clinical care self-efficacy.

2. METHODS

2.1. Study Design

The study was conducted using a cross-sectional correlational design to examine the relationship between patient safety competence and clinical care self-efficacy among nursing students.

2.2. Study Group

The study group consisted of 284 second-, third- and fourth-year nursing students who had at least one clinical practice experience. The mean age of the students was 21.36 ± 1.42 years. First-year students were not included because they did not yet have sufficient clinical practice experience.

Table 1. Descriptive characteristics of the students

Characteristic	n	%
Gender		
Female	216	76.1
Male	68	23.9
Year of study		
Second year	92	32.4
Third year	97	34.2
Fourth year	95	33.4
Patient safety education		
Received	176	62.0
Not received	108	38.0
Witnessed a medical error		
Yes	120	42.3
No	164	57.7
Clinical practice experience		
≤1 year	147	51.8
>1 year	137	48.2

2.3. Data Collection Instruments

Data were obtained using a Personal Information Form, the Patient Safety Competency Self-Evaluation Tool and the Self-Efficacy for Clinical Evaluation Scale.

Personal Information Form. The form included questions on age, gender, year of study, receipt of patient safety education, witnessing a medical error and clinical practice experience.

Patient Safety Competency Self-Evaluation Tool (PSCSE). The instrument was developed by Lee, Lee, Peters and Gwon (2020) to assess patient safety competence among nursing students, and its Turkish validity and reliability study was carried out by Eskici, Kanig, Ugur and Seren (2021). It contains 41 items and evaluates patient safety competence in three dimensions: knowledge, skills and attitudes. The knowledge dimension contains 6 items, the skills dimension 21 items and the attitudes dimension 14 items. Items are rated on a five-point scale, with higher scores indicating greater patient safety competence in the relevant dimension. Items 38 and 39 are reverse scored. In the Turkish adaptation study, Cronbach's alpha for the total scale was reported as .94 (Eskici, Kanig, Ugur and Seren, 2021). Cronbach's alpha was .88 in the present study.

Self-Efficacy for Clinical Evaluation Scale (SECS). Developed by Clark, Owen and Tholcken (2004), the scale assesses students' perceived self-efficacy in caring for people with chronic illnesses and the importance they assign to these care skills. Its psychometric evaluation in Turkish was conducted by Zengin, Pınar, Çil Akıncı and Yıldız (2014). Thirty care behaviors are evaluated in two parallel dimensions, perceived self-efficacy and perceived importance. Both dimensions use a five-point Likert-type rating. In the Turkish adaptation study, Cronbach's alpha coefficients were .94 for perceived self-efficacy and .97 for perceived importance (Zengin, Pınar, Çil Akıncı and Yıldız, 2014). The perceived self-efficacy dimension was used in this study to assess clinical care self-efficacy. Cronbach's alpha for this dimension was .91 in the present sample.

2.4. Data Analysis

Descriptive statistics, independent-samples t test, one-way analysis of variance, Pearson correlation analysis and multiple linear regression analysis were used. Continuous variables were presented as mean and standard deviation, while categorical variables were reported as number and percentage. Internal consistency was assessed using Cronbach's alpha. When a significant difference was found across years of study, post-hoc analyses were used to identify the groups responsible for the difference. Multiple linear regression analysis was performed to determine the variables predicting clinical care self-efficacy. Statistical significance was set at $p < .05$.

3. Results

The mean patient safety competence score was 4.06 ± 0.48 , and the mean clinical care self-efficacy score was 3.74 ± 0.57 . Cronbach's alpha coefficients for the two measures were .88 and .91, respectively.

Table 2. Descriptive statistics for the main variables

Variable	Mean	SD	Cronbach α
Patient safety competence	4.06	0.48	.88
Clinical care self-efficacy	3.74	0.57	.91

Patient safety competence and clinical care self-efficacy scores did not differ by gender ($p > .05$). Patient safety competence did not differ significantly by year of study ($p = .243$), whereas clinical care self-efficacy did ($p = .001$). Post-hoc comparisons showed that fourth-year students had higher clinical care self-efficacy scores than second-year students.

Students who had received patient safety education had higher patient safety competence ($p = .002$) and clinical care self-efficacy ($p = .001$) scores than those who had not. Neither variable differed significantly according to whether students had witnessed a medical error ($p > .05$). Students with more than one year of clinical practice experience had higher clinical care self-efficacy scores ($p = .002$), while patient safety competence did not differ by length of clinical experience ($p = .169$).

Table 3. Comparison of scale scores according to student characteristics

Variable	Patient safety competence Mean $\pm$ SD	Test; p	Clinical care self-efficacy Mean $\pm$ SD	Test; p
Gender				
Female	4.08 $\pm$ 0.46	t = 1.21; p = .227	3.76 $\pm$ 0.56	t = 1.08; p = .281
Male	4.00 $\pm$ 0.52		3.67 $\pm$ 0.59	
Year of study				
Second year	4.01 $\pm$ 0.49	F = 1.42; p = .243	3.61 $\pm$ 0.58	F = 6.74; p = .001
Third year	4.05 $\pm$ 0.47		3.73 $\pm$ 0.55	
Fourth year	4.12 $\pm$ 0.47		3.88 $\pm$ 0.54	
Patient safety education				
Received	4.13 $\pm$ 0.44	t = 3.08; p = .002	3.83 $\pm$ 0.54	t = 3.39; p = .001
Not received	3.95 $\pm$ 0.51		3.60 $\pm$ 0.59	
Witnessed a medical error				
Yes	4.10 $\pm$ 0.47	t = 1.31; p = .191	3.80 $\pm$ 0.56	t = 1.57; p = .118
No	4.02 $\pm$ 0.48		3.69 $\pm$ 0.58	
Clinical practice experience				
≤ 1 year	4.02 $\pm$ 0.49	t = 1.38; p = .169	3.64 $\pm$ 0.58	t = 3.06; p = .002
>1 year	4.10 $\pm$ 0.46		3.85 $\pm$ 0.54	

A moderate, positive and statistically significant relationship was found between patient safety competence and clinical care self-efficacy ($r = .38$, $p < .001$).

Table 4. Relationship between patient safety competence and clinical care self-efficacy

Variable	1	2
1. Patient safety competence	1	
2. Clinical care self-efficacy	.38***	1

*** $p < .001$.

The multiple linear regression model was statistically significant and the variables entered into the model explained 20% of the total variance in clinical care self-efficacy ($R^2 = .20$, adjusted $R^2 = .19$, $F = 13.90$, $p < .001$). Patient safety competence was the strongest predictor of clinical care self-efficacy ($\beta = .34$, $p < .001$). Receiving patient safety education ($\beta = .14$, $p = .013$) and year of study ($\beta = .16$, $p = .005$) also made significant contributions to the model. The independent effects of gender ($\beta = .05$, $p = .357$) and witnessing a medical error ($\beta = .07$, $p = .196$) were not significant.

Table 5. Multiple linear regression analysis of predictors of clinical care self-efficacy

Variable	B	SE	β	p
Patient safety competence	.40	.06	.34	< .001
Patient safety education	.16	.06	.14	.013
Year of study	.11	.04	.16	.005
Gender	.06	.07	.05	.357
Witnessing a medical error	.08	.06	.07	.196

$R^2 = .20$; Adjusted $R^2 = .19$; $F = 13.90$; $p < .001$.

4. Discussion

A moderate positive relationship was found between patient safety competence and clinical care self-efficacy among nursing students. Patient safety competence was also the strongest predictor of clinical care self-efficacy in the regression model, indicating that the two constructs are closely related within clinical education. Students with better developed knowledge, skills and attitudes required for safe care also tended to view themselves as more capable of performing clinical care behaviors. Because the study was cross-sectional, however, the direction of this relationship and any causal interpretation cannot be established.

Although the patient safety competence scores can be considered relatively high, there is still room for improvement among students. Huang, Shen, Chen, He, Huang and Li (2020), in a multicenter study of nursing students, reported that patient safety competence was related to educational and clinical characteristics. Findings reported by Fırat Kılıç and Cevheroğlu (2023) in Türkiye likewise suggest that patient safety competence should continue to be developed throughout nursing education. Balat Çalbay and Özbay (2025), meanwhile, found a moderate level of patient safety competence among nursing and midwifery students. Despite differences in samples and educational settings, these studies point in a similar direction: patient safety cannot be addressed adequately at the level of theoretical knowledge alone.

The higher competence scores among students who had received patient safety education were therefore not unexpected. Patient safety education provides the conceptual basis students need to recognize risks, understand principles of safe practice and develop behaviors aimed at preventing errors. Translating this knowledge into practice, however, also requires skills and attitudes to be addressed during education. The approach adopted by Lee, Lee, Peters and Gwon (2020), which evaluates patient safety competence through knowledge, skills and attitudes, reflects this multidimensional structure. Bianchi, Bressan, Cadorin, Pagnucci, Tolotti and Valcarengi (2016) also emphasize the need for patient safety competencies to be addressed through clearly defined learning outcomes in undergraduate nursing education.

The mean clinical care self-efficacy score was 3.74 ± 0.57 . In their evaluation of the SECS among Turkish nursing students, Zengin, Pınar, Çil Akıncı and Yıldız (2014) reported high internal consistency for the perceived self-efficacy dimension and found that scores varied according to academic achievement. An important point here is that the self-efficacy measured by this scale is different from a general feeling of confidence. It concerns students' perceptions of their ability to perform specific clinical care behaviors. In the present study, self-efficacy was therefore considered specifically within the context of clinical care.

Clinical care self-efficacy differed by year of study, with fourth-year students scoring higher than second-year students. Students with more than one year of clinical practice experience also had higher self-efficacy scores. As clinical education progresses, students encounter care practices more often, take on greater responsibility and gain repeated experience in similar clinical situations. Bandura's (1997) account of direct mastery experiences as a major source of self-efficacy provides a theoretical explanation for this finding.

The results reported by Mutlu, Azak and Kalaycı (2020) also draw attention to the quality of clinical experience. They found that general self-efficacy decreased as students' clinical anxiety increased, while students who perceived themselves as competent in practice felt more comfortable in the clinical setting. Their finding that students were particularly concerned about harming patients through incorrect practice is also relevant. Clinical experience should therefore not be judged only by the number of procedures a student has performed. Supervised practice, appropriate feedback and successful care experiences may be important in shaping how students judge their own competence.

Students who had received patient safety education also had higher clinical care self-efficacy scores, suggesting that safety education should not be considered separately from clinical practice. Knowing the ways in which a patient may be at risk, identifying which finding requires priority and selecting an appropriate care behavior may reduce uncertainty in clinical situations. Understanding what to do, why it should be done and under what conditions may also influence a student's confidence in carrying out care. Still, the cross-sectional data do not show that patient safety education directly increases self-efficacy. The possible contributions of year of study, clinical experience and other educational characteristics should not be overlooked.

The relationship between self-efficacy and clinical practice has also been observed in studies of practicing nurses. Abu Sharour, Bani Salameh, Suleiman, Subih, EL-hneiti, AL-Hussami, Al Dameery and Al Omari (2022) reported a positive relationship between self-efficacy and nurse-patient interaction. In the study by Bu, Ma, Zhai, Ma and Xu (2022), self-efficacy was associated with nurses' humanistic practice ability. Although the populations in these studies differ from the present sample, their findings support the view that self-efficacy is linked to behaviors relevant to clinical care.

No differences in patient safety competence or clinical care self-efficacy were found according to gender. In contrast, differences emerged for variables related to education and clinical experience, suggesting that the competencies examined here may be more closely connected with students' educational experiences. It is also noteworthy that simply witnessing a medical error was not associated with a significant difference. Seeing an error does not necessarily result in learning. The educational value of such an experience may depend on whether the causes of the event are discussed, human and system factors are considered, reporting procedures are explained and the student receives feedback.

The variables included in the regression model explained 20% of the variance in clinical care self-efficacy. A substantial proportion of self-efficacy is therefore likely to be related to factors not included in this study. Clinical anxiety, academic achievement, support from instructors and clinical nurses, simulation experience, the clinical learning environment, and previous successful or unsuccessful practice experiences may all have a role. Examining clinical care self-efficacy together with these variables in future studies may provide a clearer understanding of the conditions under which students' perceptions of competence develop.

From an educational perspective, the findings indicate that patient safety and clinical care self-efficacy should not be treated as two unrelated learning outcomes. It is important for students to believe that they can perform a care intervention, but performing the same intervention in accordance with patient safety principles is an inseparable part of professional competence. Simulation, clinical scenarios, case discussions and error analysis may therefore be useful when designed to develop both safety knowledge and practical experience. Feedback following clinical practice may also be more useful when it addresses not only whether a procedure was performed correctly, but also the student's decision-making process and the safety reasoning behind it.

5. Conclusion and Recommendations

Clinical care self-efficacy increased as patient safety competence increased among nursing students, and patient safety competence was the strongest predictor of clinical care self-efficacy. Students who had received patient safety education had higher scores for both safety competence and clinical care self-efficacy. Clinical care self-efficacy was also higher among students in more advanced years of study and among those with longer clinical practice experience.

In nursing education, patient safety should be addressed together with care practice rather than taught as theoretical content separate from clinical work. Simulation exercises, clinical case discussions, safe medication practices, review of errors and near-miss events, and regular feedback after practice can be used for this purpose. Students should be supported in gaining safe practice experience through gradually increasing clinical responsibility. Early identification of students with low clinical care self-efficacy may also allow clinical education to be supported according to individual needs.

Future studies may examine the relationship between patient safety competence and clinical care self-efficacy together with variables such as academic achievement, clinical anxiety, simulation experience, instructor support and the clinical learning environment. Combining self-report measures with observational indicators of clinical performance may also help clarify the relationship between students' perceived competence and their actual clinical performance.

Declarations

Ethics Approval. Ethical approval for the study was obtained from the Erciyes University Social and Human Sciences Ethics Committee on July 3, 2025.

Informed Consent. Informed consent was obtained from all participants prior to their participation in the study.

Conflict of Interest. The author declares no conflict of interest.

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Data Availability. The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions. The author was responsible for the conceptualization and design of the study, data analysis and interpretation, preparation of the original draft, and review and editing of the manuscript. The author read and approved the final version of the manuscript.

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