

Original Article

Nursing Students' Self-Efficacy Levels in Clinical Performance and their Perceptions of the Nursing Process

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Abstract

Objective: This study was conducted to evaluate nursing students' self-efficacy levels in clinical performance and their perceptions of the nursing process.

Methods: The study was of cross-sectional type. The population of the research consists of nursing students studying at Inonu University. The sample consisted of 324 students determined by power analysis. In order to collect data, "Socio- Demographic Information Form" and "Self-Efficacy Scale in Clinical Performance" and "Perceptions of Nursing Process Questionnaire" created by the researchers were used. Data were collected online between June and July 2022.

Results: It was determined that the average age of the students participating in the study was 20.5 ± 1.7 years, 65.1% were female, and 34.6% were in first grade. It was determined that the students got a total of 73.9 ± 17.3 points from the self-efficacy scale in clinical performance, 75.1 ± 17.3 points from the data collection sub-scale, 71.7 ± 18.2 points from the diagnosis and planning sub-scale, 75.0 ± 18.8 points from the practice sub-scale and 73.2 ± 19.4 points from the evaluation sub-scale. It was determined that 97.5% of the students should use the nursing process while giving care to healthy/sick individuals, but 41% of them had problems while using the nursing process.

Conclusion: It was determined that the students' self-efficacy levels in clinical performance and their perceptions of the nursing process were at a good level.

Keywords: Clinical performance, Nursing process, Self-efficacy, Student

Introduction

Nursing is a professional profession that combines theoretical and practical education (Pozam & Zaybak, 2022). In order for nurses to fully fulfill the duties and powers of the nursing profession, it is very important that they receive practical education as well as theoretical knowledge during the education and training period (Kim & Suh, 2018). The theoretical and practical education received by nursing students during the education and training period should be reinforced with

clinical education and used in clinical education (Denat, 2008; Vatansever & Mert, 2017). Clinical education enables students to gain knowledge, skills and attitudes towards professional practices in cognitive, affective and psychomotor dimensions (Nabolsi et al., 2012; Tasdelen & Zaybak, 2013). In addition, it provides the student with the opportunity to work with a team, observe the behaviors and practices of the members of this team, provide care by taking responsibility for patients, evaluate the clinical status of the patient and

make decisions, perform applications in a real environment, and communicate with both patients and team members (Caliskan & Akgoz, 2005; Bayar et al., 2009). In this context, clinical education is very important for nursing students and its importance in nursing curricula is increasing day by day (Denat, 2008). In the clinical education process, it is very important to evaluate the clinical performance of students, and it is thought that self-efficacy levels affect the clinical performance of students (Pozam & Zaybak, 2022).

Self-efficacy is defined as an individual's belief and confidence that he/she can successfully achieve the goals he/she has set in a particular subject (Bandura, 1997). The concept of self-efficacy is in line with social cognitive theory, which emphasizes social influence, social empowerment and the ability to adapt to change (Bandura, 1977). According to Bandura (1994), self-efficacy is very important in educational settings because these settings are ideal for developing self-efficacy. Students' beliefs about their ability to perform when given certain levels of academic tasks develop their self-efficacy in academic settings (Bandura, 1994). Robb, who analyzed the concept of self-efficacy, stated that self-efficacy is a cognitive variable that affects performance behaviors and affective processes (Robb, 2012). Studies have shown that self-efficacy improves nursing students' self-esteem, stress management, adjustment, self-control, and is the strongest predictor of professional identity (Bandura, 1977; Kamali et al., 2023; Kuiper & Pesut, 2004; Mei et al., 2022). In addition, it has been revealed that there is a link between perceived self-efficacy and the acquisition of clinical skills (Wagner et al., 2009; Lane et al., 2004). Students with high clinical self-efficacy should be able to actively use the nursing process that enables them to transfer theoretical knowledge to practice, determine the needs of the patient, and provide one-to-one, quality, systematic care to the patients whose needs are determined (Yilmaz et al., 2019; Tokyildiz & Yildirim, 2021).

The nursing process is the methodology of nursing practice and a scientific method of applying nursing principles in patient care (Brooker & Wough, 2007). The process

consists of determining the needs of the healthy/patient individual, planning and implementing interventions for the determined needs, and evaluating the results (Kaya, 2014; Brooker & Wough, 2007). The nursing process ensures that care is provided with a systematic, high quality, individualized and holistic approach, that the nurse performs her/his practices in a systematically organized manner, that nurses and/or nursing students develop critical thinking and independent decision-making skills, and that they develop nursing knowledge, application skills and the ability to monitor and evaluate patient outcomes (Avsar, 2014; Ozdemir, 2016). Within the framework of the nursing process, students should use their knowledge, decision-making and clinical reasoning skills to determine patient care needs and potential complications (Olmaz & Karakurt, 2019; Cheraghi et al., 2009). Nursing students are required to use the nursing process during the education period and to have developed competencies for the nursing process in order to provide quality care to healthy-patient individuals after graduation. In addition, they are expected to have well-developed clinical performances that have developed basic nursing skills, the ability to function competently in emergency clinical situations, and the ability to use appropriate knowledge, skills, and judgment (Chio et al., 2019). In this context, it is thought that students' clinical performance is affected by their perceptions of the nursing process as well as their self-efficacy levels. Accordingly, this study was conducted to evaluate nursing students' self-efficacy levels in clinical performance and their perceptions of the nursing process.

Method

The research is cross-sectional type. Nursing students studying at İnönü University constitute the population of the study (1200). The sample consisted of 324 students (95% confidence interval [CI], $\alpha=0.05$, Power (1- β err prob) = 0.95, $d=0.5$) determined by power analysis. Students in all grades were included in the study. Data were collected online between June-July 2022 through the survey link created from Google forms. The online link created for data collection was shared in class WhatsApp groups. Data collection continued until the sample size was reached. In order to collect data, "Socio-Demographic

Information Form" and "Self-Efficacy Scale in Clinical Performance" created by the researchers and a questionnaire form created in line with the literature to evaluate "Perceptions of the Nursing Process" were used (Yilmaz et al., 2019; Ozdemir, 2016; Olmaz & Karakurt, 2019; Cheraghi et al., 2009; Choi et al., 2019).

Self-Efficacy in Clinical Performance Scale (SECP): It was developed by Cheraghi et al. (2009) to determine nursing students' self-efficacy perceptions regarding their clinical performance (Cheraghi et al., 2009). A Turkish validity-reliability study was conducted by Pozam and Zaybak (Pozam & Zaybak, 2016). The evaluation of the total and sub-dimension scores of the scale is based on item mean scores. The scale does not have any cut-off point. The lowest item score average that can be obtained from the scale is 0 and the highest item score average is 100. A high score on the scale indicates a high level of self-efficacy for clinical performance. In the validity and reliability study of the Turkish version of the scale, which has four sub-dimensions: data collection (first 12 items), diagnosis and planning (items 13-21), implementation (items 22-31) and evaluation (items 32-37), the Cronbach's alpha coefficient of the SECP was found to be .98 in the total scale, and in this study, the Cronbach's alpha coefficient of the SECP was calculated as .97 in the total scale.

Perceptions of the Nursing Process Questionnaire: This form was prepared by the researchers in line with the literature. Eight multiple-choice questions were created for the nursing process. Expert opinion was obtained from 6 faculty members (4 in the field of nursing principles and 2 in the field of internal medicine nursing) to evaluate whether the questions were appropriate for the subject to be measured. The experts were asked to evaluate whether each question measured the perceptions about the nursing process and the comprehensibility of the items on an indicator between 1 and 4 points. On this indicator, 1 was scored as "not appropriate" and 4 as "very appropriate". The compatibility level of expert opinions was analyzed by Kendall W analysis. It was observed that the scores given by the experts were not statistically different (Kendall W=0.404; p=0.520) and there was agreement between the experts. Suggested corrections

were made in line with the expert opinion and used for data collection. The questions in this form evaluate the problems and perceptions of the students about using the nursing process.

Evaluation of the Data: The data were evaluated in SPSS 22 program. Number, percentage, mean, Kruskal Wallis H test, Mann Whitney U test and t test in independent groups were used in the comparison of scale mean scores according to descriptive characteristics. Cronbach's alpha coefficient was used to evaluate the internal consistency of the scales. Kendall W analysis was performed to evaluate the agreement between expert opinions. The results were evaluated at 95% confidence interval and significance at $p < 0.05$ level.

Ethical Principles of the Study: Before starting the study, ethics committee permission (E-33117789/044-63434) was obtained from Bingol University Scientific Research Ethics Committee and institutional permission was obtained from Inonu University Faculty of Nursing. Necessary information about the research was given in the data collection form and informed consent was obtained through an online form from the students who agreed to participate in the study. The principles of the Declaration of Helsinki were followed in the study.

Results

Information about the demographic characteristics of the students participating in the study is given in Table 1. Accordingly, the mean age of the students was 20.5 ± 1.79 years, 65.1% were female, 34.9% were in the first grade, 50% had a GPA between 3.00-3.50, 79.9% were successful in vocational courses and 34.3% practiced in internal clinics during the data collection process.

It was determined that the students scored a total of 73.9 ± 17.3 points from the clinical performance self-efficacy scale, 75.1 ± 17.3 points from the data collection subscale, 71.7 ± 18.2 points from the diagnosis and planning subscale, 75.0 ± 18.8 points from the implementation subscale and 73.2 ± 19.4 points from the evaluation subscale. It was observed that students' self-efficacy levels in clinical performance were above average. The highest performance was in the data collection subscale and the lowest performance was in the diagnosis and planning subscale (Table 2).

The comparison of the socio-demographic characteristics of the students and the mean score of the SECP is given in Table 3. It was determined that there was no significant difference between the gender of the students and the subscales of the SECP and data collection, planning, diagnosis, and evaluation, and that their self-efficacy levels in clinical performance were similar. However, it was determined that gender made a significant difference in the application sub-dimension and the mean score of female students was significantly higher than male students. It was determined that there was a significant difference between the grades of the students and the total and data collection, planning, diagnosis, implementation and evaluation sub-dimensions of the SECP and that the self-efficacy levels of the first grade students were significantly lower than the other grades. In the further analysis, it was determined that the difference was due to the difference between the 1st and 3rd grades. It was determined that there was no significant difference between the variables of grade point average, success in vocational courses and the clinic in which the practice was performed and the subscales of the SECP and its sub-dimensions (Table 3).

Table 4 shows the students' perceptions of the nursing process. Accordingly, the majority of the students (97.5%) reported that the nursing process should be used while caring for healthy/patient individuals, but 41% of them had problems using the nursing process and the majority (32.7%) had difficulties in the diagnostic phase. It was determined that the students mostly (35.5%) benefited from the internet and books (handbooks on the nursing process) while using the nursing process, 49.7% of them sometimes received training on the nursing process in the clinic where they practiced, but these trainings/studies were perceived as partially sufficient. When we look at the students' suggestions for increasing their competencies regarding the nursing process in the clinical environment, it was determined that they mostly wanted to increase the support of nurses to students and nurses to apply the nursing process completely and correctly. When we looked at the students' suggestions for increasing their competencies for the nursing process during the education period, it was determined that

they mostly wanted case presentations and discussions to be made, care plans to be evaluated together with the student, and more time to be allocated to the nursing process in the curriculum programs (Table 4).

Discussion

Nursing students are expected to have the necessary knowledge and skills to fulfill all the duties of the nursing profession after graduation. This requires graduated nurses to have gained competence in their field and to have high self-efficacy as a result of nursing education (Choi et al., 2019). In this context, it is very important to evaluate students' clinical self-efficacy and to take measures to improve it. In this study, nursing students' self-efficacy levels in clinical performance and their perceptions of the nursing process were discussed. According to the results of the study, it was determined that students' self-efficacy levels in clinical performance were high and 73% of them considered themselves sufficient.

A limited number of studies evaluating nursing students' self-efficacy levels in clinical performance were found in the literature. In the study conducted by Pozam and Zaybak (2022) with nursing students, it was determined that the self-efficacy levels of the students were high and 80% of them found themselves sufficient. Again, in the study conducted by Pozam and Zaybak on the validity and reliability of the self-efficacy scale in clinical performance, it was determined that the self-efficacy levels of the students were high (Pozam & Zaybak, 2016). In the study conducted by Okuroglu, it was found that the mean score of the students on the SECP was 66.56 and their self-efficacy was at a moderate level. It was determined that the results obtained in the studies did not differ much, the students considered themselves to be sufficient at the moderate level and above, and this study also supported the literature. It is thought that the implementation of the standards of NNCEP (Nursing National Core Education Program), which determines the minimum standards of nursing education in universities in Turkey, and the spread of accreditation programs in nursing are effective in improving the self-efficacy levels of students by increasing the quality of nursing education.

It was determined that the students scored above the average in the data collection, diagnosis and planning, implementation and evaluation subscales of the self-efficacy in clinical performance scale.

In this study, students received the lowest score from the diagnosis-planning subscale and the highest score from the data collection subscale. When the literature was examined, in the study conducted by Pozam and Zaybak similar to the findings of our study, students scored the lowest on the diagnosis-planning subscale and the highest on the implementation subscale (Pozam & Zaybak, 2022). In a study conducted by Şendir et al. with senior nursing students, it was stated that students had the most difficulty in determining the intervention to be applied to the patient in the diagnostic and implementation stages of the nursing process. They stated that they performed the evaluation stage more easily (Sendir et al., 2009). In the study conducted by Yilmaz et al., (2015), it was found that the majority of nursing students thought that the nursing process was necessary for the quality of care and that they did not have problems using the stages of the process. In this study, it was determined that students had the most difficulty in the diagnosis - planning stage and their self-efficacy was low in this area. Among the main objectives of the nursing profession, it is very important to teach nursing diagnostic systems in the education process and to develop their self-efficacy in this regard in terms of establishing a common language specific to the profession and expanding its use. In this study, students received the lowest score from the diagnosis-planning subscale and the highest score from the data collection subscale. When the literature was examined, in the study conducted by Pozam and Zaybak similar to the findings of our study, students scored the lowest on the diagnosis-planning subscale and the highest on the implementation subscale (Pozam & Zaybak, 2022). In a study conducted by Şendir et al. with senior nursing students, it was stated that students had the most difficulty in determining the intervention to be applied to the patient in the diagnostic and implementation stages of the nursing process. They stated that they performed the evaluation stage more easily

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Table 1. Frequency distribution of students' socio-demographic characteristics			
Variable	Group	Number	Percent
Age 20.5±1.79			
Gender	Women	211	65.1
	Male	113	34.9
Class	1	112	34.6
	2	88	27.2
	3	65	20.1
	4	59	18.2
Grade point average	1.49-2.00	11	3.4
	2.01-2.50	22	6.8
	2.51-3.00	108	33.3
	3.01-3.50	162	50.0
	3.51-4.00	21	6.5
Success	Fail one course	49	15.1
	Failed more than one course	16	4.9
	Successful	259	79.9
Clinical internship in the last practicum	Internal clinic	111	34.3
	Surgical clinic	134	41.4
	Pediatric clinic	47	14.5
	Intensive care unit	20	6.2
	Emergency service	12	3.7

Table 2. Mean Scores of Self-Efficacy Scale in Clinical Performance

Scale	Min-Max	X±SD
Data collection	12.50-100.0	75.18±17.38
Planning-diagnosis	11.11-100.0	71.70±18.22
Application	14.00-100.0	75.01±18.80
Evaluation	10.00-100.0	73.24±19.47
SECP total	12.97-100.0	73.97±17.38

Table 3. Comparison of Socio-Demographic Characteristics and the Mean Score of SECP

Variable	Number	Data	Planning	Application	Evaluation	Total SECP	
		Collection	Diagnostics	X±SD	X±SD	X±SD	
		X±SD	X±SD	Test and	Test and	Test and	
		Test and	Test and	Significance	Significance	Significance	
		Significance	Significance				
Gender	Women	211	75.8±16.9	72.6±18.1	76.5±18.7	74.4±18.9	75.0±17.0
	Male	113	73.9±18.2	70.0±18.2	72.1±18.6	71.0±20.2	72.0±17.8
			t:.958	t:1.216	t:2.030	t:1.517	t:1.489
			p=.339	p=.225	p=.043*	p=.130	p=.138
Class	1	112	73.0±18.2	68.9±17.6	72.7±19.4	71.0±18.7	71.3±17.7
	2	88	74.7±15.3	72.9±17.0	74.3±17.7	74.4±19.6	75.3±16.2
	3	65	79.3±17.8	76.8±19.3	77.7±19.5	79.0±18.8	78.2±18.1
	4	59	78.7±17.4	76.0±19.0	77.8±18.3	78.2±20.4	77.9±17.0
			KW:9.557	KW:10.94	KW:4.250	KW:9.312	KW:8.801
			p=.023*	p=.012*	p=.036*	p=.025*	p=.032*

	1.49-2.00	11	74.5±15.8	69.3±12.6	72.0±13.4	68.3±18.5	71.2±13.5
	2.01-2.50	22	73.0±17.6	70.3±18.8	73.8±21.1	71.9±21.3	72.4±19.5
	2.51-3.00	108	77.5±17.2	73.9±17.4	76.8±17.4	75.2±17.8	76.3±16.4
	3.01-3.50	162	76.9±17.3	74.1±18.3	76.3±19.3	76.3±20.1	75.5±17.5
	3.51-4.00	21	77.7±19.4	74.7±22.1	77.1±21.8	77.4±20.3	77.4±20.3
Grade point average			KW:4.456	KW:6.508	KW:5.790	KW:4.832	KW:5.052
			p=.348	p=.164	p=.215	p=.305	p=.282
Success in vocational courses	Fail one course	49	73.0±20.6	68.7±19.6	71.1±21.1	69.8±21.0	71.4±19.7
	Failed more than one course	16	70.5±13.2	70.1±12.1	69.9±13.2	70.5±16.2	69.5±14.5
	Successful	259	75.5±16.9	73.5±18.2	73.2±18.6	73.8±19.3	75.5±16.9
			KW:.272	KW:2.260	KW:.141	KW:1.768	KW:.755
			p=.873	p=.323	p=.932	p=.413	p=.686
Clinical internship in the last	Internal clinic	111	76.6±15.6	73.3±16.6	76.7±16.5	73.8±17.7	75.4±15.2
	Surgical clinic	134	73.2±17.4	69.7±17.7	73.6±19.4	71.8±20.1	72.2±17.7

practicum course	Pediatric clinic	47	76.8±21.9	73.2±23.8	73.3±23.1	75.1±22.9	74.7±22.1
	Intensive care unit	20	75.2±14.2	71.3±16.7	75.0±17.6	74.5±16.9	74.1±15.6
	Emergency service	12	76.6±15.6	72.7±14.6	81.1±14.3	74.0±17.2	76.5±14.7
			KW:5.650	KW:5.459	KW:2.032	KW:2.052	KW:3.077
			p=.227	p=.243	p=.730	p=.726	p=.545

X: Mean, SD: Standard Deviation, *p<0.05, t: Independent sample t test, KW: Kruskal-Wallis test, \mathcal{F} :Tukey HSD

Table 4. Data on Students' Perceptions of the Nursing Process

Variable	Group	Number	Percentage
Do you think that the nursing process should be used when caring for a healthy/patient individual?	Yes	316	97.5
	No	8	2.5
Do you experience difficulties in using the nursing process?	Yes	133	41.0
	No	191	59.0
At which stage do you experience difficulties in using the nursing process?	Data collection	81	25.0
	Diagnostics	106	32.7
	Planning	32	9.9
	Application	68	21.0
	Evaluation	37	11.4
When using the nursing process Clinic nurse What are your sources of support?	Internet Books	115	35.5
	Lecture notes	79	24.4
	Teaching staff	68	21.0
Do you receive training on the nursing process in the clinics where you practice?	Yes	118	36.4
	Sometimes	161	49.7
	No	45	13.9
Do you find the studies that will increase your competence regarding the nursing process in the clinics where you practice sufficient?	Yes	116	35.8
	Sometimes	168	51.9
	No.	40	12.3

What would be your suggestions to improve your knowledge and skill level regarding the nursing process in the clinic where you practice?	• Increasing the support of nurses to student nurses	93	28.7
	• Nurses also implement the nursing process completely and correctly	44	13.6
	• Increasing the number of nurses per patient	25	7.7
	• Providing resources to clinics for the nursing process	22	6.8
	• Reducing the number of students practicing in clinics	22	6.8
	• Case presentation and discussions	69	21.3
What would be your suggestions to improve your knowledge and skill level regarding the nursing process during your education period?	• Evaluation of care plans together with the student	33	10.2
	• Allocating more time for the nursing process in curriculum programs	33	10.2
	• Using active learning methods (such as web-based teaching, concept mapping)	27	8.3
	• Separate nursing process course	17	5.2
	• Increasing the number of resources in the school library	12	3.7
	• Receiving mentorship or peer support	10	3.1

* More than one answer was given.

Discussion cont.

When the literature was examined, it was determined that the majority of nursing students and nurses had positive perceptions about the use of the nursing process (Yilmaz et al., 2015; Karadakovan & Yesilbakan, 2004). This study supports the literature and almost all of the students had positive perceptions that the process should be used. However, it was determined that 41% of the students had problems while using the nursing process and had the most difficulty in making

a nursing diagnosis. In the study conducted by Yilmaz et al., students stated that the reasons for experiencing difficulties in the nursing process were that patients did not give appropriate answers to the questions at the data collection stage of the nursing process, having difficulty or embarrassment in asking the relevant questions to the patient, and lack of information in the diagnosis process. Keski and Karadag stated that the majority of nursing students had difficulty in using the nursing process. The process stage in which students had the least difficulty was the

evaluation stage (Keski & Karadag, 2010). In the study conducted by Karadakovan and Yesilbakan, it was determined that students were inadequate in choosing interventions for nursing diagnoses (Karadakovan & Yesilbakan, 2004). As determined in the studies in the literature, it was observed that students mostly had difficulty in using the nursing process, and the steps with difficulty could vary. These changes are thought to be due to the individual differences of the students and the fact that these studies were conducted in educational institutions in different regions of Turkey.

In this study, it was determined that when students wanted to get help and support while using the nursing process, they mostly applied to online search engines and least to instructors. Although the internet provides a wide range of resources, it is very important for student development to increase the support of nurses and clinical educators with whom they interact one-on-one. It was also observed that students' expectations from educators were in this direction. The evaluation of the care plans together with the educator and their request for the nursing process course to be included in the curriculum as a separate course prove this. In addition, it was found that the majority of the students suggested that the support of the nurses to the student nurses in the clinic where they practiced should be increased and case presentations and discussions should be made in the education in order to improve the nursing process.

Conclusion: According to the results of this study, it was determined that the self-efficacy level of the students in clinical performance was high, the class was a variable affecting the self-efficacy level, and the variables of gender, graduated school, grade point average, success status in vocational courses and the clinic where the practice was performed did not affect self-efficacy. It was also determined that students' perceptions of the nursing process were positive and almost all students agreed with the necessity of using it. Students who had problems using the nursing process had lower self-efficacy. According to these results, it can be recommended to increase clinical school cooperation in terms of improving students' self-efficacy, to guide nurses to guide students

in using the nursing process, to add the nursing process course to the nursing education curriculum and to facilitate its teaching by using active learning methods.

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