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Evaluation of Nursing Interventions Performed By Nursing Students and Their Competency Levels in Clinical Practice

Öğrenci Hemşirelerin Klinik Uygulaması Sırasında Gerçekleştirdikleri Hemşirelik Girişimleri ve Yeterlilik Düzeylerinin Değerlendirilmesi

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EVALUATION OF NURSING INTERVENTIONS PERFORMED BY NURSING STUDENTS AND THEIR COMPETENCY LEVELS IN CLINICAL PRACTICE

ABSTRACT

Aim: This study aimed to evaluate the nursing interventions performed by nursing students and their competency levels in clinical practice.

Method: This descriptive and comparative study was carried out with 381 nursing students who agreed to participate. The data were collected using the "Personal Information Form" and the "Nursing Interventions Self-Assessment Form". Collected data were evaluated via frequency, percentages, mean tests, and the chi-square test.

Results: The results showed that 50.1% of the students had enough theoretical knowledge in clinical practice, and 28.9% were able to perform clinical skills. The rate of fourth-grade students performing 30 of 41 nursing interventions was statistically significantly higher than the second and third-grade students ($p<0.05$). Among the nursing interventions, 93.7% of the students felt competent in body temperature measurement, 92.4% in assessing respirations and radial pulse, and 92.1% in blood pressure measurement. 50.9%, 49.6%, and 47% felt incompetent in nasogastric tube insertion, nasogastric tube feeding, and performing chest compressions practices, respectively.

Conclusion and Suggestions: The study revealed that student nurses felt competent in interventions that they frequently practice like measurement of vital signs, taking patients' health history and parenteral medication, and incompetent in interventions like urinary catheter insertion and nasogastric tube insertion that they have fewer practice opportunities at hospitals. it is recommended to conduct further studies to determine the practices that nursing students feel incompetent, increase the theoretical education and laboratory practices that improve the competency levels of students, use active learning methods, prepare proficiency exams to pass classes, create portfolios, support the training provided by supervisor nurses in clinics and conduct peer training activities.

Keywords: *Nursing Education; Clinical Skills Teaching; Nursing Student; Competency.*

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ÖZ:

Amaç: Bu çalışma, kliniklerde uygulama yapan hemşirelik öğrencilerinin temel hemşirelik girişimlerini gerçekleştirme durumları ve yeterlilik düzeylerini belirlemek amacıyla yapıldı.

Yöntem: Tanımlayıcı nitelikte olan çalışma Hemşirelik bölümünde öğrenim gören 381 öğrenci ile yürütüldü. Çalışma verileri öğrencilere "Kişisel Bilgi Formu" ve "Temel Hemşirelik Girişimleri Tanımlama Formunun" yönlendirilmesi ile elde edildi.

Bulgular: Öğrencilerin %70.1'inin klinik staja hazır hissettiği ve %86.1'inin klinikte uygulama yaparken olumsuz deneyim yaşamaktan korktuğu belirlendi. Öğrencilerin %50.1'inin klinik uygulamadaki teorik bilgisinin, %28.9'unun ise klinik becerileri gerçekleştirebilme durumlarının yeterli olduğu tespit edildi. Çalışmada, 41 hemşirelik girişiminden 30'unda dördüncü sınıf öğrencilerinin uygulamaları gerçekleştirme oranları ikinci ve üçüncü sınıf öğrencilerine göre istatistiksel olarak anlamlı düzeyde yüksektir ($p<0.05$). Hemşirelik girişimleri arasında öğrencilerin %93.7'sinin vücut sıcaklığının ölçümünde, %92.4'ünün solunum ve nabız ölçümünde, %92.1'inin ise kan basıncı ölçümü uygulamalarında kendilerini en çok yeterli gördüğü saptandı. Öğrencilerin%50.9'u nazogastrik sonda yerleştirme, %49.6'sı nazogastrik sonda ile beslemeve %47'si kalp masajı uygulamaları kendilerini en çok yetersiz gördüğü hemşirelik girişimleridir.

Sonuç ve Önerileri: Öğrenci hemşirelerin hastanede vital bulguların ölçümü, anamnez alma ve parenteral ilaç uygulamaları gibi sık uygulama fırsatı yakaladıkları konularda kendilerini yeterli, üriner kateter ve nazogastrik sonda takma gibi daha az uygulama fırsatı yakaladıkları uygulamalarda ise yetersiz gördükleri bulundu. Hemşirelik bölümü öğrencilerinin kendilerini yetersiz hissettiği uygulamaların belirlenmesi için çalışmalar yapılması, öğrencilerin yeterliliklerini artırıcı teorik eğitim ve laboratuvar uygulamalarının artırılması, aktif öğrenme yöntemleri kullanılması, sınıf geçmede yeterlilik sınavları yapılması, portfolyolar oluşturulması, kliniklerde rehber hemşire eğitiminin desteklenmesi ve akran eğitimlerinin yapılması önerilmektedir.

Anahtar Kelimeler: *Hemşirelik Eğitimi; Klinik Beceri Öğretimi; Öğrenci Hemşire; Yeterlilik.*

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INTRODUCTION

Nursing education is the transfer of theoretical knowledge presented in the classroom to practice skills in the laboratory and clinical environment (Cant & Cooper, 2010; Terzioğlu et al., 2012). Clinical teaching in nursing is the best educational practice where nursing students can have a chance to get prepared for their careers. Therefore, it constitutes the core of nursing education (Oermann et al., 2017).

The clinical experience gained through the integration of theoretical and practical education has a great contribution to practice-based nursing education (Killam & Heerschap, 2013; Pollard et al., 2007). Clinical experience provides an effective educational environment through real-life experiences for the students in learning from theory to practice and gaining professionalism (Oermann et al., 2017). This type of education should be carried out under the guidance of nurse instructors and clinical nurses (Biçer et al., 2015). Thanks to the experiences gained in clinical teaching, students acquire clinical skills of self-efficacy, communication, decision-making, and working as team members required for nursing interventions (Biçer et al., 2015; Mueller et al., 2016). However, it is reported that students' missing learning opportunities or having negative experiences in their clinical education decrease their success and this situation affects their involvement in the field of nursing as competent nurses after graduation (Mueller et al., 2016). Especially novice nurses have deficiencies in their psychomotor skills and encounter many problems and challenges in the first years of their profession (Öztürk et al., 2016). Among the factors that hinder the development of students' professional knowledge and skills at the desired level are the shortage of skill laboratory practice hours, the high number of students per instructor, the lack of adequate tools and equipment in practice laboratories, etc. (Kapucu & Bulut, 2011; Mete & Uysal, 2010; Terzioğlu et al., 2012). It is also emphasized that in clinical education, an indispensable part of skill development, students cannot perform nursing interventions as they are taught in the lessons and laboratory, and they do not get enough support from the clinician nurses (Biçer et al., 2015; Karaöz, 2013). These negative clinical experiences influence students' confidence and attitudes in the clinical environment more than positive ones (Algoso & Peters, 2012). However, the increase in students' positive clinical experiences reduces many negative emotions that affect mental health such as anxiety and stress (Arabacı et al., 2014), and students gain more in clinical learning environments where they can work collaboratively and are free from communication problems (Elcigil & Sarı, 2007; Akgün et al., 2012).

Nursing students' lack of knowledge and experience during the education process can lead to many problems before and after graduation. Therefore, they must gain all the necessary theoretical knowledge and skills before graduation.

Based on this need, this study was planned to evaluate the nursing interventions performed by nursing students and their competency levels in clinical practice.

MATERIAL AND METHOD

Type and Purpose of the Research

This study that was carried out to evaluate the nursing interventions performed by nursing students and their competency levels in clinical practice is a descriptive and comparative type of study.

Research Universe and Sample

The population of the study included 589 students studying in the 2nd, 3rd, and 4th grades of the Faculty of Health Sciences Nursing Department of a university located in the Blacksea region in Turkey, and the sample was 381 (64.6%) students who volunteered to participate in the study. Sample selection was not performed, and the whole population was tried to be reached. Inclusion criteria for student nurses were attending nursing program and having clinical practice experiences. Those who did not continue their education and who did not have a previous clinical internship were not included in the study.

Ethical Considerations

To carry out the study, an institutional permit (63582098/299) was obtained from the relevant school administration on September 24, 2019, and all the student nurses gave their verbal consent before their inclusion in the study.

Data Collection Tools and Process

The data were collected between October 10, 2019, and October 18, 2019, using the "Personal Information Form" and the "Nursing Interventions Self-Assessment Form" developed by the researchers.

The Personal Information Form: Prepared by the researchers, the form consists of 11 questions about the descriptive characteristics of the student nurses, including their age, gender, marital status, the school they graduated from, and their thoughts about nursing interventions.

The Nursing Interventions Self-Assessment Form: The form, including 41 nursing interventions that students can perform during their clinical training at the hospital, was developed by researchers in line with the literature (Craven et al., 2013; Potter et al., 2016; Taylor et al., 2015) to evaluate the knowledge and skill

competencies of student nurses (Table 1). In the form, the students replied "Yes" and "No" to nursing interventions that they can practice and "Competent", "Undecided" and "Incompetent" to evaluate their competency levels.

Data Analysis

Frequency, percentages, and mean tests were used to present the descriptive characteristics of student nurses, and the chi-square test was used to compare nursing interventions according to the grades.

Limitations of the Study

The main identified limitation of the study is that students self-assessed their competencies regarding nursing skills. In addition, the study was conducted only with nursing students at the Faculty of Health Sciences at a university.

RESULTS

The results showed that 86.4% (n=329) of the student nurses were female, 13.6% (n=52) were male, and their mean age was 20.97±1.19. 28.6% (n=109) were second-grade, 30.4% (n=116) were third-grade, and 40.9% (n=156) were fourth-grade students. 96.6% were Turkish, and 44.6% willingly chose their departments.

78.5% of the students thought that nursing was the right profession for them, and 70.1% felt prepared for clinical practice. However, 68.8% were afraid of applying some nursing interventions, 86.1% of the students had a negative experience in the clinic, and 77.7% committed malpractices. 50.1% felt competent in theoretical knowledge, and 28.9% felt competent in psychomotor skills during the clinical practice. Clinical nurses were expected to be informative (86.6%), consider the student nurses as members of the healthcare team (86.1%), and be tolerant (80.1%) (Table 1).

Table 1. Students' Descriptive Characteristics (n= 381)

Descriptive Characteristics	Number (n)	Percentage (%)
Is nursing the right profession for you?		
Yes	299	78.5
No	82	21.5
Do you feel prepared for clinical practice?		
Yes	267	70.1
No	114	29.9
Are there any nursing interventions that you are afraid to apply in the clinical practice?		
Yes	262	68.8
No	119	31.2
Are you afraid of having negative experiences during clinical practice?		
Yes	328	86.1
No	53	13.9

Do you think your theoretical knowledge is enough for clinical practice?		
Yes	191	50.1
No	190	49.9
Do you think your psychomotor skills are developed enough for clinical practice?		
Yes	110	28.9
No	271	71.1
What negative experiences are you afraid of having?		
To commit a malpractice*	296	77.7
To hurt the patient *	160	42
Inability to provide the necessary care and service to the patient*	134	35.2
What are your expectations from the clinical nurses?		
Being informative *	330	86.6
Considering students as members of the healthcare team *	328	86.1
Being tolerant *	305	80.1
Providing sufficient practices for nursing students*	304	79.8
Being smiling *	285	74.8
Ensuring the student's orientation to the clinic *	284	74.5
Not making students do tasks other than their responsibilities *	263	69
Being a role model for the student *	235	61.7

*n was folded

The comparison of the nursing interventions performed by the students in clinical practice according to their grades revealed a statistically significant difference in 30 nursing interventions out of 41 ($p < 0.005$). No statistically significant difference was seen in terms of grades in the following interventions; *"intradermal injection, IV catheter insertion, IV fluid therapy follow-up, urinary catheter insertion, oxygen saturation measurement, oral airway insertion, oropharyngeal/nasopharyngeal suctioning, perform chest compressions (CPR), nasogastric tube insertion, nasogastric tube feeding, and nasogastric tube removal" (p>0.005) (Table 2).*

Table 2. Comparison of the Nursing Interventions Performed During the Clinical Practice According to Students' Grades (n=381)

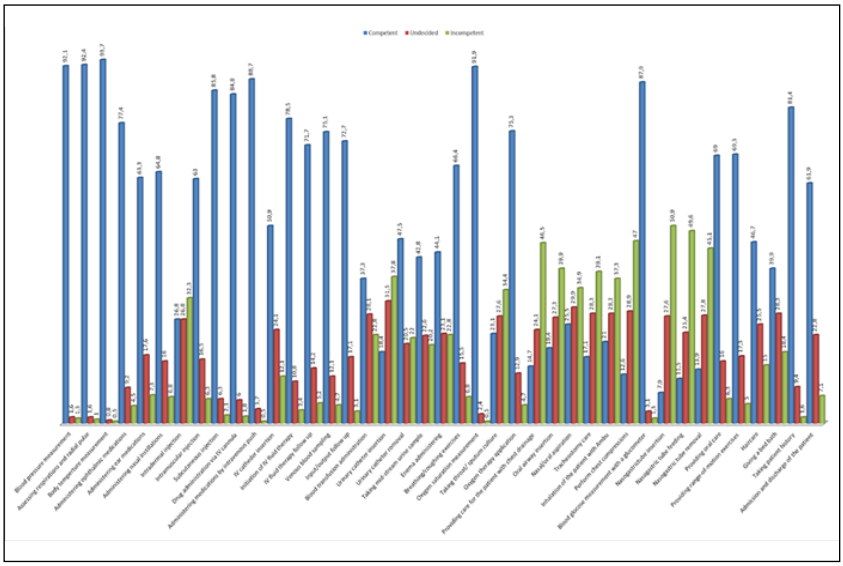
Grades **Nursing Interventions**	**2nd grade n=109** *n (%)*	**3rd grade n=116** *n (%)*	**4th grade n=156** *n (%)*	**p***
Vital Signs				
Blood pressure measurement	95 (%87.1)	103 (%88.7)	149 (%95.5)	0.015
Assessing respirations and radial pulse	95 (%87.1)	100 (%86.2)	148 (%94.8)	0.031
Body temperature measurement	93 (%87.1)	101 (%87.9)	148 (%94.8)	0.021
Topical Medications				
Administering ophthalmic medications	63 (%57.5)	71 (%61.2)	138 (%88.4)	0.000
Administering ear medications	38 (%34.8)	39 (%33.6)	110 (%70.5)	0.000
Administering nasal instillations	43 (%39.4)	49 (%42.2)	104 (%66.6)	0.000
Parenteral Medications				
Intradermal injection	23 (%21.1)	33 (%28.4)	41 (%26.2)	0.429
Intramuscular injection	88 (%80.7)	95 (%81.8)	146 (%93.5)	0.003
Subcutaneous injection	91 (%83.4)	94 (%81.5)	148 (%94.8)	0.003
Drug administration via IV cannula	87 (%79.8)	97 (%83.6)	145 (%92.9)	0.005
Administering medications by intravenous push	91 (%83.4)	96 (%82.7)	148 (%94.8)	0.002
IV Fluid Therapy				
IV catheter insertion	66 (60.5%)	71 (%61.2)	112 (%71.7)	0.088
Initiation of IV fluid therapy	83 (%76.1)	94 (%81)	142 (%89.7)	0.003
IV fluid therapy follow-up	82 (%75.2)	89 (%76.7)	134 (%85.8)	0.057
Venous blood sampling	87 (%79.8)	93 (%80.1)	147 (%94.2)	0.000
Input/output follow up	86 (%78.8)	92 (%79.3)	147 (%94.2)	0.000
Blood transfusion administration	39 (%35.7)	58 (%50)	92 (%58.9)	0.001
Elimination				
Urinary catheter insertion	32 (%29.3)	25 (%21.5)	37 (%23.7)	0.373
Urinary catheter removal	44 (%40.3)	64 (%55.1)	88 (%56.4)	0.023
Taking a mid-stream urine specimen	36 (%33)	43 (%37)	83 (%53.2)	0.002

Enema administering	37 (%33.9)	55 (%47.4)	83 (%53.2)	0.008
Oxygenation				
Breathing/coughing exercises	59 (%54.1)	79 (%68.1)	134 (%85.8)	0.000
Oxygen saturation measurement	93 (%83.3)	101 (%87)	148 (%94.8)	0.210
Taking throat/sputum culture	14 (%12.8)	19 (%16.3)	49 (%31.4)	0.000
Administration oxygen therapy	83 (%76.1)	82 (%70.6)	136 (%87.1)	0.003
Providing care to the patient with chest drainage	16 (%14.6)	23 (%19.8)	46 (%29.4)	0.013
Oral airway insertion	19 (%17.4)	28 (%24.1)	27 (%17.3)	0.306
Oropharyngeal/nasopharyngeal suctioning	37 (%33.9)	43 (%37)	69 (%44.2)	0.208
Tracheostomy care	18 (%16.5)	23 (%19.8)	51 (%32.6)	0.004
Inhalation of the patient with bag-valve-mask	14 (%12.8)	32 (%27.5)	52 (%33.3)	0.001
Performing chest compressions (CPR)	8 (%7.3)	20 (%17.2)	30 (%19.2)	0.230
Nutrition				
Blood glucose monitoring with a glucometer	87 (%79.8)	95 (%81.8)	144 (%92.3)	0.007
Nasogastric tube insertion	12 (%11)	15 (%12.9)	16 (%10.2)	0.784
Nasogastric tube feeding	10 (%9.1)	18 (%15.5)	30 (%19.2)	0.080
Nasogastric tube removal	11 (%10)	19 (%16.3)	32 (%20.5)	0.077
Individual Hygiene				
Providing oral care	65 (%59.6)	67 (%57.7)	136 (%87.1)	0.000
Providing range-of-motion exercises	70 (%64.2)	79 (%68.1)	138 (%88.4)	0.000
Haircare	26 (%23.8)	46 (%39.6)	74 (%47.4)	0.000
Giving a bed bath	28 (%25.6)	37 (%31.8)	70 (%44.8)	0.004
Others				
Taking patient health history	95 (%87.1)	105 (%90.5)	151 (%96.7)	0.012
Admission and discharge of the patient	79 (%72.4)	82 (%70.6)	137 (%87.8)	0.001

*chi-square test

Student nurses felt competent in the following nursing interventions the most; measuring body temperature (%93.7), respiratory and pulse rate measurement (%92.4), and blood pressure measurement (92.1%). However, nasogastric tube insertion (50.9%), nasogastric tube feeding (49.6%), and perform chest compressions (CPR) (47%) were among the interventions they felt incompetent (Graphic 1).

Graphic 1. Student Nurses' Competency Levels in Nursing Interventions



DISCUSSION

Clinical practice is an essential process based on practical skills and knowledge that make up the center of nursing education (Andersson & Edberg, 2012; Kol & İnce, 2018). For the clinical practice to be effective and efficient, the student must practice and learn by experiencing (Karaöz, 2013). Besides, it is known that students' thoughts about nursing interventions influence their psychomotor competencies (Bulfone et al., 2016). Therefore, it is of great importance to evaluate student nurses' opportunities to practice and their competencies of theoretical knowledge and skills of the profession in the clinical setting before graduation (Mueller et al., 2016).

In this study, exploring the student nurses' practice of nursing interventions and their level of competence, more than half of the student nurses stated that nursing was the right profession for them, and they were ready for clinical practice, and again more than half did not thought their psychomotor skills developed enough for clinical practice. This result shows that student nurses' preparations or readiness for the psychomotor skills required for the profession are not sufficient. Especially when invasive nursing interventions performed in clinical practice are practiced less by students, their skills and self-efficacy are negatively affected (Bulfone et al., 2016; Bıyık Bayram 2022, Van Horn & Christman, 2017).

In this study, there may have been differences in the results due to reasons such as students not having the opportunity to practice in clinics and professional laboratories equally at every grade level, not having enough opportunities to work with the nurse instructor during clinical practice, and insufficient feedback on their clinical practice competence.

The study demonstrated that more than half of the students found their psychomotor skills not enough for clinical practice, and more than half were afraid of practicing in the clinic and experiencing negative experiences. The main reason why students generally have negative experiences and nursing interventions that they are afraid of practicing can be explained by their feelings of inadequate psychomotor skills. Likewise, it was reported that nursing students fear malpractices, negative experiences during clinical practice, hurting the patient, and communicating with the patient (Açıksöz et al., 2016).

When students start the clinical experience, they feel unfamiliar with the practices and clinical setting and need support and role models in practices that require competency. This support is provided by the clinical nurses they encounter during the clinical experience as well as a faculty member who guides their professional perspective (Biçer et al., 2015). In this context, the main expectations of the students from clinical nurses in this study were being informative, considering stu-

dents as members of the healthcare team, and being tolerant. Literature has citations that student nurses do not get the support they expect from clinical nurses, and negative attitudes, and insufficient support that students are exposed to negatively affect their confidence, attitudes, and learning status (Algoso & Peters, 2012; Craven et al., 2013). Other studies also show that student nurses cannot get the support they want from clinical nurses and that the negative attitudes and insufficient support that students are exposed to affect students' confidence, attitudes, and learning (Karaöz, 2013; Andersson & Edberg, 2012) and their competencies regarding their clinical experiences (Killam & Heerschap, 2013; Bulut and Çelik, 2019; Karadağ et al, 2013; Kesgin et al., 2018; Polat et al., 2018). When evaluated in this context, it can be concluded that the students in our study did not feel adequate in psychomotor skills, and their fear of having negative experiences affected their clinical experiences.

The nursing interventions were compared according to students' grades and it was determined that fourth-grade nursing students' rate of performing 30 of the 41 nursing interventions was significantly higher than the second and third-grade students (Table 2). This result may have been influenced by the fact that fourth-grade students were about to graduate, they internalized many professional practices and knowledge, and they had the opportunity to practice in many clinical settings including intern practice, and their competence and professional awareness increased. Similarly, Van Horn and Christman (2017) determined in their study that senior nursing students performed nursing practices more than other classes and had a higher level of competence. Clinical skills taught during nursing education can be developed through interaction with patients and clinical experience (Algoso & Peters, 2012). In this context, it is thought that the completion of the nursing knowledge that fourth-year nursing students received during their clinical education, their ability to transfer this knowledge into skills, and their competencies developed as a result of their adaptation to clinical experience affect the practice rates. Oetker-Black et al. (2014) also noted that students who felt competent were able to transfer the knowledge and skills they learned in the laboratory environment to the clinical environment in an appropriate way.

In this study, almost all the students felt competent in measuring vital signs. The highest competency level was in measuring body temperature (Graphic 1), and the rate of practicing vital signs measurement at all grades was higher than in other nursing practices (Table 2). Measuring vital signs is a pivotal nursing practice that is taught in the first step of nursing education and is among the interventions (Oktay et al., 2017). Therefore, it is an expected result that nursing students feel competent about these interventions that they frequently encounter and practice. Türkmen et al. (2016) conducted a study with third-year nursing students in the pediatric internship and found that more than half of the students felt competent in measuring vital signs; the highest level of competency was in measuring body

temperature, and the lowest was in measuring blood pressure, which is consistent with this study.

The evaluation of the competency of the students in drug administration showed that the nursing students felt competent in "ophthalmic medication" the most and in "ear medication" the least, and in parenteral drug administration in the "administering medications by intravenous push" the most and "intradermal injection" the least (Graphic 1). In addition, fourth-grade students performed all other drug administrations with the highest rate except for intradermal injection (Table 2). Hosseini et al. (2009) associated the reason why intradermal injection is not used frequently with the low practice opportunity of students. Parallel to this study, the relevant studies have reported that fourth-grade students' practice rate of drug administration via intramuscular injection, insulin injection, and IV push is higher than other grade levels (Van Horn & Christman, 2017), students feel partly competent about drug administration, and they feel most incompetent in intradermal injection (Türkmen et al., 2016).

Among the IV fluid therapy interventions, the initiation of IV fluid therapy and blood transfusion were the interventions that students felt competent the most and the least, respectively (Graphic 1). The interventions that are most frequently encountered by every student starting clinical experience are IV fluid therapy interventions. This situation provides students with the opportunity to frequently participate in IV fluid therapy practices to improve themselves. Blood transfusion, on the other hand, is a risky intervention as it causes irreversible problems and should be performed by professional nurses (Göktaş et al., 2015). For this reason, it is thought that students' participation in this practice only as an observer in clinical experience may have affected their competence in this intervention. In studies involving fourth-year nursing students, their practice rate of initiating IV fluid therapy was found to be higher than other grades (Van Horn & Christman, 2017), and almost all students did not know the steps in blood transfusion practices (Güneş et al., 2008), which is consistent with our study.

It is a noteworthy finding that the practice regarding the excretion practices that students felt the most competent was to remove urinary catheters and the least competent in urinary catheter insertion (Graphic 1). The rate of urinary catheter insertion practice was found to be low in all grades (Table 2). Most nursing students feel incompetent in the application of urinary catheter insertion and other practices (Caliskan et al., 2012; Türkmen et al., 2016) and that they do not have the opportunity to perform enema and urinary catheterization practices in the clinic (Caliskan et al., 2012), which support this study results. This result may have been influenced by the fact the urinary catheter insertion procedure is mostly performed by physician assistants in clinics, nursing students do not have the opportunity to insert urinary catheters, and there are gender differences (Hosseini et al., 2009).

Among the oxygenation practices, the application that students felt most competent was the measurement of oxygen saturation and the least competent in performing chest compressions (CPR) (Graphic 1). It is thought that in the clinics, students are not allowed to practice cardiac massage, inhalation of the patient with a bag-valve-mask, inserting oral airway, providing care to the patient with chest drainage, oropharyngeal/nasopharyngeal suctioning, and tracheostomy care practices because they are invasive, serious, and urgent applications. However, oxygen saturation measurement is noninvasive, so students can apply it more often. Various studies evaluating students' competency in performing chest compressions (CPR) revealed that there are deficiencies in resuscitation application steps (Sançar & Canbulat, 2019), and very few students feel competent (Türkmen et al., 2016) in this intervention, which is in line with this study findings.

Among the nutritional interventions, the students felt competent in measuring blood glucose with a glucometer the most and nasogastric tube insertion the least (Graphic 1). However, it is worth noting that nasogastric tube insertion and removal, and nasogastric tube feeding were performed by very few students from all grades (Table 2). Nursing students rarely encounter these practices during their clinical education, and when they do, they do not have the opportunity to practice them one-on-one (Caliskan et al., 2012; Hosseini et al., 2009). This situation may have negatively affected the competency level of the students.

Among the personal hygiene interventions of nursing students, they felt competent the most was providing range-of-motion exercises in bed and giving a bed bath the least. The most important factor affecting this finding is that the students included in the study rarely have the opportunity to give a bed bath while they can often provide range-of-motion exercises in bed. Individual hygiene practices are a nursing skill that affects the safety, comfort, and well-being of the patient and forms the basis of nursing practices (Marshall, 2013). Gül et al. (2019) emphasized that nursing students could not find enough opportunities in the clinic to give a bed bath, give a head bath, and bath in a sitting position (Gül et al., 2019). In terms of individual hygiene practices, fourth-grade nursing students had the opportunity to practice more (Table 2).

It was seen that almost all the students at every grade level took patient health history. Most of the students from all grades performed admission and discharge of patients, and they felt competent in this practice. It is thought that the most encountered practice during clinical practice is patient admission and discharge; therefore, students often take patients' histories and feel competent in this practice.

IMPACT STATEMENT

The study results indicate that student nurses felt competent in interventions that they frequently practiced with clinical teaching, students acquired clinical

skills of self-efficacy and working as a team member required for nursing interventions. These findings support the clinical teaching, including cooperative work of clinical instructors and clinical nurses on the behalf of students.

CONCLUSION AND SUGGESTIONS

Student nurses involved in this study felt that nursing was the right profession for them, they felt prepared for clinical practice, and their theoretical knowledge of clinical practice was adequate. The fourth-grade students' rate of practicing nursing interventions was higher than the second and third-grade students, and the rate of measuring the vital signs was higher than the other nursing interventions in all grades. Almost all the students felt competent in measuring vital signs and among the practices that students felt incompetent were nasogastric tube insertion, nasogastric tube feeding, and cardiac massage.

In line with the results of this study, it is recommended to conduct further studies to determine the practices that nursing students feel incompetent, increase the theoretical education and laboratory practices that improve the competency levels of students, use active learning methods, prepare proficiency exams to pass classes, create portfolios, support the training provided by supervisor nurses in clinics and conduct peer training activities.

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Conflict of Interest

The authors reported no conflict of interest.

Author Contributions

Design of Study: YK (%60), ÇGÖ (%40)

Data Acquisition: YK (%60), ÇGÖ (%40)

Data Analysis: YK (% 70), ÇGÖ (% 30)

Writing Up: YK (%40), ÇGÖ (% 35), AB (%25)

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