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# The Effect of Nursing Process Education on Students' Perceptions of Nursing Diagnoses

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**Abstract**

The aim of this study is to evaluate the effect of nursing process education on nursing students' perception of nursing diagnoses. This quasi-experimental study was conducted with the second-year students who took the course of internal medicine nursing. One hundred and eleven second-year students (91.72%) who were attending a nursing faculty were included in the pretest. Each of the training sessions given to the students lasted for 60 minutes, and a total of 12 sessions of training were applied as three sessions per week. The online training was given to students by an educator with a presentation and case discussion. Afterwards, the post-test was carried out with a total of 98 (73.68%) students. Data were collected by using a 'Descriptive Characteristics Form' and the 'Perceptions of Nursing Diagnosis Survey'. In the statistical analysis of data, number, percentage, mean score and paired t-test were used. There was no statistical difference between the pretest and posttest total scores of the "Perceptions of Nursing Diagnosis Survey" before and after the online training for the nursing care plan process ($p > 0.05$). Students had a perception of nursing diagnoses at a moderate level. It was concluded that the case-based interventions had limited effects. The learning and use of the nursing diagnosis process by both nursing students and nurses facilitates its applicability in the field and makes it easier for nurses to provide more evidence-based care in the clinic. It is recommended that the teaching techniques used in the study be enriched and developed.

**Keywords:** education, nursing diagnosis, nursing process, nursing students, perception

**Abstrak**

***Pengaruh Pendidikan Proses Keperawatan terhadap Persepsi Mahasiswa tentang Diagnosis Keperawatan***. *Tujuan dari penelitian ini adalah untuk mengevaluasi pengaruh pendidikan proses keperawatan terhadap persepsi mahasiswa keperawatan tentang diagnosis keperawatan. Penelitian kuasi-eksperimental ini dilakukan pada mahasiswa tahun kedua yang mengambil mata kuliah keperawatan penyakit dalam. Seratus sebelas mahasiswa tahun kedua (91,72%) yang mengikuti pendidikan di fakultas keperawatan diikutsertakan dalam* pre-test*. Setiap sesi pelatihan yang diberikan kepada mahasiswa berlangsung selama 60 menit, dan total 12 sesi pelatihan diterapkan sebanyak tiga sesi per minggu. Pelatihan* online *diberikan kepada mahasiswa oleh seorang pendidik dengan presentasi dan diskusi kasus. Setelah itu,* post-test *dilakukan dengan total 98 (73,68%) mahasiswa. Data dikumpulkan dengan menggunakan 'Formulir Karakteristik Deskriptif' dan 'Survei Persepsi Diagnosis Keperawatan'. Dalam analisis statistik data, jumlah, persentase, skor rata-rata dan uji-t berpasangan digunakan. Tidak ada perbedaan statistik antara skor total* pre-test *dan* post-test *dari "Survei Persepsi Diagnosis Keperawatan" sebelum dan sesudah pelatihan* online *untuk proses rencana asuhan keperawatan ($p > 0,05$). Mahasiswa memiliki persepsi tentang diagnosis keperawatan pada tingkat sedang. Disimpulkan bahwa intervensi berbasis kasus memiliki efek yang terbatas. Pembelajaran dan penggunaan proses diagnosis keperawatan oleh mahasiswa keperawatan dan perawat memfasilitasi penerapannya di lapangan dan memudahkan perawat untuk memberikan perawatan yang lebih berbasis bukti di klinik. Disarankan agar teknik pengajaran yang digunakan dalam penelitian ini diperkaya dan dikembangkan.*

***Kata Kunci:*** *diagnosis keperawatan, mahasiswa keperawatan, pendidikan, persepsi, proses keperawatan*

## Introduction

Nursing profession is the discipline of care based on providing comprehensive care to the individual, family, and community (Melita-Rodriguez et al., 2021). Nurses are responsible for under-

standing people' status of health or illness, identifying their requirements, planning the necessary practices, and solving their problems from the birth to the death (Köse & Çelik, 2020). Modern nursing needs to show a systematic approach to provide the best care to people through the nursing process. The use of the nursing process by nurses while caring for the patient ensures correct decision making and prevents malpractices (Karaca & Aslan, 2018; Karakurt et al., 2020; Yilmaz et al., 2015).

The nursing process is a widely recognized theoretical model in nursing education and plays a key role in the nurse's competence (Löfgren et al., 2023; Yurtsever & Karagözoğlu, 2020). This process refers to the use of scientific problem-solving method in nursing care (Ardahan et al., 2019; Basit & Korkmaz, 2021; Köse & Çelik, 2020). The process consists of five stages: data collection, diagnosis, planning, implementation, and evaluation. The success of each stage is closely related to whether or not the preceding stage is done correctly. The most important benefit of the nursing process that provides scientific concreteness to nursing practices is to provide individual-centered nursing care (Benedet et al., 2018; Erer et al., 2017).

In addition, the nursing care given within the frame of a plan contributes to time management and communication between team members. Thus, the nursing profession is provided with more professional progress (Melin-Johansson et al., 2017). However, today, the nursing process cannot be applied effectively due to different reasons (Baraki et al., 2017). Nurses acquire the knowledge and skills, which are necessary for using the nursing process, during undergraduate nursing education. Students are expected to use the knowledge and skills, they would gain during their education, in their professional lives.

The nursing process is the most basic and only method that enables nurse educators to teach their students to identify the patients' problems and plan solutions for them. Many nursing schools that provide undergraduate education aim to train professional nurses who can determine the nursing care requirements of a healthy or sick person, and plan, implement, and evaluate these requirements in accordance with the standards (Basit & Korkmaz, 2021; Karakurt et al., 2020). In order to increase the use of the nursing process in the field of practice, it is necessary to train nurses who understand the philosophy of the nursing process and know how to apply it (Löfgren et al., 2023).

Nursing education aims to enable students to acquire professional nurse qualifications by establishing a connection between both theoretical knowledge and clinical practice (Carless-Kane & Nowell, 2023; Pai et al., 2017). Moreover, all student nurses must be clinically competent in order to meet the clinical needs of patients (Shahsavari et al., 2017). Clinical self-efficacy has a very important place in the care behaviors of nursing students (Abdal et al., 2015). Determining the self-efficacy levels of students regarding their clinical performance is an effective approach in identifying their level of transfer of theoretical knowledge to practice. In this sense, evaluating students' self-efficacy perceptions regarding their clinical performance has become more and more important (Pozam & Zaybak, 2016).

Studies have reported that as students' levels of clinical self-efficacy perception increase, they become more clinically competent and their anxiety levels regarding clinical practice lower (Açıksöz et al., 2016; Mohamadirizi et al., 2015). It is thought that nursing students' competence in determining nursing diagnoses will positively affect their self-efficacy in clinical practice and enhance the quality of care provided to individuals. However, studies have shown that students have problems in their knowledge and practices regarding the nursing process (Yilmaz et al., 2015; Yilmaz et al., 2019). Nurses and nursing students could not achieve the desired level of success in their knowledge of the nursing process (Zamanzadeh et al., 2015).

In the literature, it was found that students had problems in making the correct nursing diagnosis. Their ability to determine nursing diagnoses, descriptive characteristics, related factors, outcome criteria, planning/implementation and evaluation rates were at moderate level (Erer et al., 2017; Lotfi et al., 2019; Yilmaz et al., 2015). Also, the students were inadequate in determining the interventions for nursing diagnoses (Ardahan et al., 2019; Lotfi et al., 2019). In this context, the aim of the study is to evaluate the effect of the nursing process training on nursing students' perception of nursing diagnoses.

## Methods

The research was designed as a quasi-experimental study with a one-group pretest-posttest design. Second-year students studying at a nursing faculty were included in the study. They had no prior clinical experience. In Türkiye, nursing students complete their education in eight semesters. More than 800 students in total were receiving education in Turkish in the present study. They were Turkish and Turkish Cypriot from the similar cultural background. Students graduate by taking a total of seven applied courses and two main courses (excluding for first year) throughout their education period. According to the content of the course, training is provided in the nursing process.

Three over four of the students studying at the faculty, where the study was conducted, are foreign nationals and come to the Turkish Republic of Northern Cyprus (TRNC) for educational purposes. The international validity of the postgraduate diploma here is considered an important choice. Since the study was carried out especially in the second year of the pandemic, Diluted Hybrid Education Model was decided for preventing students from coming here. This situation has shaped the model of education and indirectly the way of working.

The population of the study was composed of second-year students (N = 133) who were studying in Turkish language and took the course of Internal Medicine Nursing. One hundred and eleven (91.72%) second-year students who studied at a nursing faculty and voluntarily agreed to participate (as pretest) were included in the study. Five of the students had to withdraw from the study due to technical reasons caused by using a phone application and eight students also had to withdraw from the study since they did not want to continue. The post-test was carried out with a total of 98 (73.68%) students. A "Descriptive Characteristics Form" and the "Perceptions of Nursing Diagnosis Survey" were used as data collection tools.

**Descriptive Characteristics Form.** It was prepared by the researcher upon the literature review (Karaca & Aslan, 2018; Karakurt et al., 2020). This form contains questions about descriptive characteristics nursing students such as age, gender, nationality, marital status, high school they graduated from, status of choosing the profession willingly, and environmental factors affecting their choice of profession.

**Perceptions of Nursing Diagnosis Survey**. The "Perceptions of Nursing Diagnosis Survey", developed by Frost et al. (1991), consists of a total of 30 items. Cronbach's alpha coefficient was 0.94 and Cronbach's alpha coefficients of the subscales ranged from 0.79 to 0.92. The Turkish validity and reliability study of the scale was conducted by Akın-Korhan et al. (2013) and they determined the Cronbach's alpha value of the study as 0.84. The scale includes four subscales that assess the ease of use of nursing diagnoses and the perceptions of their benefits to the professional care process.

In the scale, there are 9 items in the subscale on the perceptions of the effects of the diagnoses on the definition and promotion of the nursing profession. Moreover, there are eight items in the subscale that assess perceptions of the patient's facilitation in clearly defining his condition. Also, there are 8 items in the subscale that assess perceptions regarding the ease of use of diagnosis and 5 items related to the conceptual

aspect of diagnoses. This is a five-point Likert (strongly agree/strongly disagree) type scale. A low total score indicates that nursing diagnoses are perceived positively by nurses.

The descriptive characteristics form was applied to10 students in order to assess its readability in the pilot study. These students were included in the sample because no question was not revised. Data was collected online via Google-forms. Afterwards, the students received training on nursing diagnoses and the process. The "Perceptions of Nursing Diagnosis Survey" was applied online to the students as a part of the posttest at the end of the training.

Data collection in this study was based on self-report method, which may be associated with response bias. To reduce the possibility of this bias, students were informed that all data will be collected anonymously, and the data would not be associated with their university years, particularly. And also, during the data collection process, the researchers accompanied the students as observers.

SPSS 22.00 software was used to analyze the data. In the data analysis, number, percentage frequency, standard deviation, mean, appropriate parametric or non-parametric tests were used according to the distribution of the data. The Kolmogorov–Smirnov normality assessment test was conducted to determine whether the data were normally distributed. Independent-sample t-test was used to assess differrences with significance level of $p < 0.05$.

**Content of the Training.** The students took eight hours of theoretical lessons and 16 hours of practical lessons per week, 14 weeks in a semester. However, they continued with distance education due to the COVID-19 pandemic.

Table 1. Training in the Nursing Process of the Cases

| Case | Nursing Diagnoses and Process |
|---|---|
| Case 1: Acute myocardial infarction | Within the scope of the first case, all findings were explained on the patient data collection form.<br>Every diagnostic finding was presented as a nursing diagnosis.<br>While explaining the diagnoses, the researcher explained the basis on which nursing diagnoses are based.<br>She explained in which direction the aim was determined in the problem to be eliminated in nursing diagnoses.<br>Interventions were identified and implementation and evaluation stages were explained. |
| Case 2: Liver cirrhosis | Within the scope of the second case, all findings were explained on the patient data collection form.<br>During the determination of the nursing diagnosis, the students were brainstormed, and a nursing diagnosis was made with their participation.<br>After the researcher explained the case, the students were assigned tasks in the subject given as the second case so that there would be at least one nursing diagnosis and homework was given.<br>The planning, implementation and evaluation stages of the interventions were explained online by the students using power point materials with the participation of the other students.<br>The researcher corrected wrong and missing matters while the students were giving lectures. |
| Case 3: Cerebrovascular accident | The researcher explained the presentation of the case.<br>Nursing diagnoses were determined by the students.<br>The attempts of the determined nursing diagnoses were given to different students and their development was supported.<br>The researcher corrected wrong and missing matters while the students were giving lectures. |
| Case 4: Chronic obstructive pulmonary disease | The researcher explained the presentation of the case.<br>Nursing diagnoses were determined by the students.<br>The attempts of the determined nursing diagnoses were given to different students and their development was supported.<br>The researcher corrected wrong and missing matters while the students were giving lectures. |

After the theoretical part of the course, training with case presentations was given to the students for four hours per day, three days a week, totaling 12 hours for one month. The examples chosen for the case discussions aiming for educational purposes were selected from the main topics.

**Application Protocol.** The students were informed about six important system issues and disease information. The nursing process was explained in detail before the case presentation.

The first author explained the cases and used PPTs to help students understand all the cases in detail. She made eye contact with them and asked questions about the cases to motivate them during the presentations. After the case presentations, she gave them 10 minutes to think about the case. Then, students were encouraged to discuss the cases. They determined nursing diagnoses for the cases and planned the nursing process (Table 1). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline was followed to report this study.

**Ethical Consideration.** Ethical approval from the University Ethics Committee (Number: YDU/2021/97-1445; Date: November 25, 2021) and institutional permission from the Faculty of Nursing, where the study would be conducted were obtained, in order to conduct the study. In addition, the participants were volunteer students.

## Results

The mean age of the students was 20±2.73 years, and more than half of them (60%) were female. 76.5% of the students were citizens of the Republic of Turkey (TR) and 40% of them graduated from a regular high school. The majority of the students chose the profession willingly and their parents were effective in their choice of profession (63.2%) (Table 2).

There was no statistical difference between the pretest and posttest scores in terms of total scale score ($p > 0.05$). However, in the ease-of-use subscale, the difference between the pre-test and posttest scores was statistically signi-ficant ($p < 0.05$) (Table 3).

## Discussion

Nursing education consists of a comprehensive four-year process. In this process, all stages of the theoretical preparation of the nursing process

Table 2. Distribution of Data on Socio-demographic Characteristics of Student Nurses (n = 111)

| Variables | n | % |
|---|---|---|
| Age | | |
| Mean age 20±2.73 | | |
| Gender | | |
| Female | 67 | 60 |
| Male | 44 | 40 |
| Nationality | | |
| Republic of Turkey | 85 | 76.5 |
| Turkish Republic of Northern Cyprus | 23 | 20.7 |
| Other | 3 | 2.8 |
| High School from which the student graduated | | |
| Super high school | 3 | 2.8 |
| General high school | 45 | 40.5 |
| Private high school | 23 | 20.7 |
| Health vocational high school | 37 | 33.3 |
| Choosing the profession willingly | | |
| Yes | 98 | 88.2 |
| No | 13 | 11.8 |

Table 3. Nursing Students' Perceptions of Nursing Diagnoses Before and After Training and Their Effects on Subscales

| Scale and its subscales | Before the training X±SD | After the training X±SD | p |
|---|---|---|---|
| Definition and introduction of the nursing profession | 3.22±0.43 | 1±0.42 | 0.10 |
| A clear description of the patient's condition | 3.14±0.44 | 1.29±0.38 | 0.05 |
| Ease of use | 2.5±0.44 | 1.17±0.46 | 0.04 |
| Conceptual aspect | 1±0.42 | 1.2±0.45 | 0.06 |
| **Total scale score** | **2.83±0.29** | **1.44±0.32** | **0.08** |

are discussed in detail (Yilmaz et al., 2015). The professional field courses and the hospital practices cover the nursing process. The students are asked to create their own nursing processes for the patients they care for. Due to the COVID-19 pandemic, the hours of hospital practices were reduced. During this pandemic, nursing students received distance education and carried out their clinical practices online. This situation caused students to feel inadequate in terms of clinical skills. It is human nature to be hesitant about the unknown. Students initially feel uneasy due to their inadequate knowledge of nursing diagnoses. Then, after the training, it causes them to experience the ease of use of the "nursing process."

As students work through the cases, they soon realize that determining diagnoses is not as difficult as they think. In their study, Kurtgöz and Yılmaz (2023) reported that the students from the upper classes obtained significant results in diagnoses in terms of ease of use. It is seen that the use of the nursing process in the clinical field both by students and after graduation is still at an insufficient level (Cengiz et al., 2022; Mousavizadeh, 2022). In order to eliminate the deficiencies related to the preparation of the process, online case discussions were tried to be supported.

More than half of the students participating in the present study were female. From the past to the present, the nursing profession is a role that has been chosen by society for women. However, the manpower and financial reasons have changed this perception. Although the nursing profession is preferred mostly by women, nursing is becoming more attractive for the male gender every passing day (Olğun & Adıbelli, 2020; Yıkar et al., 2020).

It was determined that the majority of students graduated from general high school. Nursing students in the studies in the literature have been reported to be graduated from different high schools (Kavurmacı et al., 2021). This is because the high school categories vary according to the countries, and the distribution of general high schools may be higher. In other words, these categories vary in Türkiye such as general high school, vocational high school, Anatolian high school, regular high school, super high school and health high school. This can lead to differences in the distribution of the high schools' students graduated from.

In this study, sociodemographic variables such as gender and educational status were investigated due to differences in the desire to learn during the education process. In other words, such variables may affect the level of benefit students receive from the education provided and the level of perception of diagnoses in this case. Contrary to this view, the level of perception of diagnoses by students is not affected by sociodemographic data differences yet from the method and content of education. In this case, the importance of examining the level of moderator effect in literature increases.

The results of the present study indicated that the students preferred the nursing profession willingly. Related studies conducted with nursing students have reported that various reasons play a role in students' choice of profession

such as the opportunity to find a job, the need for the profession, the quota of preference, and the financial return (Dikeç et al., 2017; Olğun & Adıbelli, 2020). It has been found that mostly parents are effective on students' choice of profession. The contribution of the students' acquaintance with nurses in the immediate environment and the effect of this environment on their choice of profession was found to be high at the same rate. In their study, Özdelikara et al. (2016) examined the factors affecting nursing students' career choices and reported that the scale means scores of those who were close to nurses were higher and more effective. The result of the study is compatible with the literature (Köse & Çelik, 2020).

In this study, the nursing students' perception of nursing diagnoses before and after the online training was examined and Students' mean scores on the subscales of the Perceptions of Nursing Diagnosis Survey were lower after the training than pre-training scores. The students gave more positive results with the effect of the training. However, the difference in the subscales of 'a clear description of the patient's condition' and 'ease of use' before and after the training was found to be significant. The nursing process, which is tried to be taught through-out the nursing education process, forces students because it is an abstract concept.

After students learn this process theoretically, they have difficulty in putting it into practice. Especially in hospital practice, different cases are preferred, and frequent repetitions make learning easier. In other words, students make practices in rotations in different clinics, for a longer period of time in the normal process. Therefore, efficiency can be increased by witnessing a wide variety of cases and practicing on them in different clinics for a longer period. However, due to COVID-19 quarantine measures, practices cannot be made in the hospital environment, and this deficiency was tried to be completed online.

In the study of Şahin and Khorshid (2021), in which they examined the effect of nursing process education on perceiving diagnoses, they reported that the students had significant scores after the training compared to the pre-training scores. The pre-training findings of the present study were similar to those of Köse and Çelik's (2020) study. In their study, Olmaz and Karakurt (2019) stated that although nurses felt competent in the use of care plan, they needed training. In general, the results of the present study are compatible with the results in the literature.

The significant result obtained in the ease-of-use sub-dimension of the scale, especially, may be due to the fact that the information is newly learned, especially when measured immediately after theoretical training. In pandemic conditions, being only the listening party, facilitates their perspective on cases. However, it is thought that applying the nursing process in the field may pose a threat to students and increase their anxiety level, unlike learning by imagining. Therefore, it suggests that they will have difficulty in learning and using. It may be thought that the research findings are due to the fact that they are based on a low online education model in some areas. Conducting a similar study model with face-to-face case lessons may create a difference in the results. However, it is thought that the presence of the case discussions in the clinical field may affect the situation here. It is thought that putting the knowledge that students learn in case lessons into practice on patients in the clinic will be significantly instructive.

**Limitations.** This study has some limitations. The cases were imaginary; therefore, implementation and evaluation stages of the nursing process could not be evaluated. Only one class of second-year students was included in the study. Therefore, the study included only second-year students taking this course and the entire population constituted this group. The fact that

the study was conducted with only second-year students of a nursing faculty and the results could not be adapted to the entire population can be considered an important limitation.

Another important limitation is that interaction could not be prevented and therefore the study was conducted with a single group and the difference between the groups could not be shown. It is thought that interaction was prevented because the individual opinions of the students were collected online. However, online data collection was conducted with the students, and they were told that there was no face-to-face contact, but it is important to fill out the forms in an unbiased manner in order to prevent bias in personal opinions. They were informed that these filled forms were a part of this course, and it was important to participate. It was stated that participation in the forms would contribute to academic success.

## Conclusion

The present study revealed that students' perception of nursing diagnoses were at a moderate level. Nursing process education elevated their level of perception of nursing diagnoses. It is suggested that the educational content of nursing process should be included in the curricula for longer hours, as it contributes to the development of professionalism in nursing, providing quality care and the development of students. The findings of the study clearly show us the importance of the nursing process and that it can be improved with training for professional development. It is thought that if the evidence-based care management in the literature is combined with the nursing process, higher quality care will be provided. In addition, it enhances the quality of care within the nursing profession and results in professional satisfaction. It is thought that patient satisfaction will increase as a positive effect in this case.

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