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Nurses' Behaviors, Perceptions and Diagnoses in the Diagnosing Phase of the Nursing Process within the Scope of a Case Study: A Mixed Type Study

Hemşirelerin Örnek Vaka Kapsamında Hemşirelik Sürecinin Tanılama Aşamasında Davranışları, Algıları ve Belirledikleri Tanılar: Karma Tıp Çalışma

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ABSTRACT

Introduction: The nursing process is a systematic, dynamic problem-solving process that expresses the way of thinking and acting that nurses use in performing their practices.

Aim: It aims to examine nurses' perceptions of nursing diagnoses, their behaviors regarding the diagnosis phase, and their ability to identify appropriate diagnoses within the scope of a case study.

Method: 103 nurses working in a private hospital in Ankara participated in the study. Both qualitative and quantitative research methods were used. Quantitative data were obtained with questionnaires, the Perceptions of Nursing Diagnosis Survey, and reports created by the nurses. Qualitative data were obtained from the observation notes kept by observing the behaviors of the nurses regarding the diagnosis.

Results: Approximately half of the nurses had difficulties in data collection, diagnosis, and planning phases. Nurses had less difficulty obtaining a health history from the patient and determining subjective data after the case analysis. There was no significant difference between pre-test and post-test results regarding the problems experienced during the diagnosis phase, but their perceptions of nursing diagnoses changed positively. In the planning phase, nurses' post-test results increased significantly. As a result of the content analysis, the behaviors related to the diagnosis phase were discussed under three main themes: "data collection", "using reference book", and "diagnosing".

Conclusion: The case study contributed to the nurses' experience of how to deal with the diagnosis of the individuals and raising awareness of the problems they experienced in this phase.

Keywords: Case study; nursing diagnosis; nursing process.

ÖZ

Giriş: Hemşirelik süreci hemşirelerin uygulamalarını gerçekleştirirken kullandıkları düşünme ve yapma şeklini ifade eden sistemli, dinamik bir problem çözme sürecidir.

Amaç: Hemşirelerin örnek bir vaka kapsamında hemşirelik tanılarına ilişkin algılarını, tanılama aşamasına ilişkin davranışlarını ve ele alınabilecek uygun tanıları belirleyebilme durumlarını incelemektir.

Yöntem: Araştırmaya, Ankara'daki özel bir hastanede çalışmakta olan 103 hemşire katılmıştır. Nitel ve nicel araştırma yöntemleri birlikte kullanılmıştır. Nicel veriler soru formları, Hemşirelik Tanıları Algılama Ölçeği ve hemşireler tarafından oluşturulan raporlardan elde edilmiştir. Nitel veriler ise hemşirelerin tanılamaya ilişkin davranışları gözlenerek tutulan gözlem notlarından elde edilmiştir.

Bulgular: Hemşirelerin yaklaşık olarak yarısının veri toplama, tanılama ve planlama aşamalarında güçlükle yaşadıkları belirlenmiştir. Hemşireler vaka analizi sonrasında hastadan sağlık öyküsü alma ve subjektif verileri belirleme konularında daha az güçlük yaşadıklarını belirtmiştir. Tanılama aşamasında yaşanan sorunlar konusunda vaka analizi öncesi ve sonrası arasında anlamlı bir farklılık olmadığı ancak hemşirelik tanılarına ilişkin algılarının olumlu yönde değiştiği belirlenmiştir. Planlama aşamasında ise uygun girişimlerin seçimi konusunda vaka analizi sonrasında sorun yaşayan bireylerin sıklığında belirgin bir artış olmuştur. İçerik analizi sonucu tanılama sürecine ilişkin davranışlar "veri toplama", "kaynak kitap" ve "tanılama" olmak üzere üç ana tema altında ele alınmıştır.

Sonuç: Örnek vaka incelemesi hemşirelerin bireylerin sorunlarını tanılama aşamasında nasıl ele alabileceklerini deneyimlemelerine ve bu süreçte yaşadıkları sorunlara ilişkin bir farkındalık kazanmalarına katkı sağlamıştır.

Anahtar Kelimeler: Hemşirelik süreci; hemşirelik tanısı; vaka çalışması.



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Introduction

The nursing process is a systematic, dynamic problem-solving process that expresses the way of thinking and acting that nurses use in performing their practices. A nurse collects data to decide on the needs of the individual, diagnoses the individual's problems, plans and implements the necessary nursing interventions, and evaluates the results of the practices (Wilkinson, Treas & Smith, 2016). The nursing process organizes the nurse's knowledge and skills, ensures professional communication, autonomy, and legal records, and aids individualized and quality patient care (Erer, Akbaş & Yıldırım, 2017; Karahan & Kav, 2019).

Some studies reported that nurses do not adequately perform the nursing process (Andsoy, Güngör, Dikmen & Nabel, 2013; Özdemir, Zaybak & İslamoğlu, 2016; Semachew, 2018; Miskir & Emishaw, 2018; Olmaz & Karakurt, 2019; Basit, 2020). Factors such as motivation, lack of knowledge, time, and nurse inadequacy are stated among the reasons why the nursing process cannot be carried out effectively (Zamanzadeh, Valizadeh, Tabrizi, Behshid & Lotfi, 2015; Özdemir et al., 2016; Miskir & Emishaw, 2018; Lotfi et al., 2020; Zeleke, Kefale & Necho, 2021). It is reported that nurses have difficulties at every phase of the process especially, in performing data collection, diagnosing, and planning stages (Andsoy et al., 2013; Zamanzadeh et al., 2015; Özdemir et al., 2016; Miskir & Emishaw, 2018; Olmaz & Karakurt, 2019; Basit, 2020; Lotfi et al., 2020; Zeleke et al., 2021). A systematic literature review study stated that nurses' knowledge, perceptions, experiences, and skills might affect the frequency and accuracy of recording nursing diagnoses. Moreover, the availability of training and resources related to the diagnosis, the complexity of the patient's condition, hospital policies, and the hospital environment have also contributed to the problem (Paans, Nieweg, van der Schans & Sermeus, 2011). Current studies have often focused on nurses' knowledge about nursing diagnoses, identifying correct diagnoses, perceptions of diagnoses, or general nursing process (Zamanzadeh et al., 2015; Özdemir et al., 2016; Miskir & Emishaw, 2018; Olmaz & Karakurt, 2019; Basit, 2020; Lotfi et al., 2020; Zeleke et al., 2021). The study, in the diagnosing stage, which is one of the stages where nurses had the most difficulty in the process, was discussed through a case study, including data collection and planning stages.

Aim

The study aimed to examine nurses' behaviors, perceptions and diagnoses in the diagnosing phase of the nursing process within the scope of a case study.

Research Questions

- What are the problems experienced by nurses in the diagnosing phase during the case study?
- What are nurses' perceptions of nursing diagnoses?
- Are nurses able to identify correct diagnoses through the case study?
- How are nurses' behaviors regarding the diagnosis process?

Methods

Research Type

The study design was a mixed type including qualitative and quantitative research methods. When obtaining the qualitative data of the research, nurse case managers observed how the participants performed the diagnosing process regarding the case study and recorded notes regarding the observation. The observation notes were examined and analyzed thematically. However, a single-group quasi-experimental study design was used before and after the case study. Thus, the difference between nurses' perception of nursing diagnoses and their problems while performing the data collection, diagnosis, and planning stages of the nursing process was examined by pre-test and post-test methods.

Place and Time of Research

The study was conducted in a private hospital in Ankara. Data were collected between May and December 2019.

Research Population and Sample

The study population consisted of 252 nurses working in the hospital. Overall, 103 nurses who met the inclusion criteria (having received nursing process training within the scope of orientation training, working for at least one year, working in inpatient services, and volunteering to participate in the research) participated in to study. No sample size calculation was made in the study, and all nurses who met the inclusion criteria were included in the study. In addition, a post-hoc power analysis was calculated with the G*Power statistical program, according to the pre-test and post-test mean and standard deviation values of The Perceptions of Nursing Diagnosis Survey, the effect size was as 0.85, and the power of the test was as 0.95 with 95% confidence level. According to this analysis, 66 samples are sufficient for the study.

Data Collection Tools

Quantitative data were collected using questionnaires created by the researchers, the Perceptions of Nursing Diagnosis Survey, and the reports created by the participants within the scope of the case study. During the group work, two nurse case managers observed the participants in terms of their behaviors to determine nursing diagnoses. The nurses recorded their observations by taking notes on a piece of paper that the participants could not see. These observation notes formed the qualitative data of the study.

Question Form: It includes questions about nurses' descriptive characteristics (age, gender, educational status, etc.) and the problems in performing the nursing process.

The Perceptions of Nursing Diagnosis Survey (PNDS): The scale was developed by Olsen, Frost and Orth (Halverson et al., 2011) and Akin Korhan, Hakverdioğlu Yönt, Ak and Erdemir (2013) conducted a Turkish validity and reliability study. The scale consists of 26 items and four subscales "delineation and promotion of nursing profession", "clear representation of patient situation", "ease of use", and "conceptual orientation". The total score of the five-point Likert-type scale and its

subscales varies between 1-5. A low score on the scale indicates that nursing diagnoses are perceived positively by nurses. In the validity and reliability study of the scale, Cronbach's alpha value was 0.84, and Cronbach's alpha values of the subscales ranged from 0.30 to 0.91. In our study, Cronbach's alpha value on the scale was 0.86, and Cronbach's alpha values on the subscales were between 0.54 and 0.91.

Ethical Considerations

Approval (No:2019/175) was obtained from the Ethics Committee Bolu Abant İzzet Baysal University in order to carry out the research. Written permission was obtained from the institution where the research was conducted, and verbal consent was obtained from the participants.

Data Collection

For the study, the researchers prepared a scenario for an elderly patient with diabetes, hypertension, and rhythm disorder, who was followed up on the 5th post-op day after a hip fracture developed due to falling. However, a data set was created in the scenario. The data set included the medical history, health history according to functional health patterns, vital signs, laboratory findings, and physical evaluation findings of the patient. Expert opinions were obtained from 14 academicians and nurse clinicians for the case and data sets. Experts examined whether the nursing diagnoses determined by the researchers were appropriate by considering the defining characteristics and the related factors in the case. Experts evaluated the data set, with one of the options "well", "not well", and "correction needed", and stated their recommendations if "not well" or "correction is needed." There was no significant difference between the evaluations in terms of nursing diagnoses that could be considered within the scope of the case (Kendall W=0.101; p=0.086). The data were collected during the case studies to which the nurses were invited. These studies were carried out in two groups of 5-6 nurses. First, a short history introducing the patient and a document containing the instructions prepared by the researchers in line with the scenario were given to the participants.

Then, participants were asked to read the scenario and identify nursing diagnoses that could be specifically addressed to this patient. In this process, they were asked to examine and discuss the case, collect the necessary data by asking the case managers, and report their nursing diagnoses according to the North American Nursing Diagnosis Association (NANDA-I) classification. The nursing diagnosis handbook, which they also use in the clinic for nursing diagnoses, was presented as a reference (Carpenito, 2012).

Each case study lasted approximately 3 hours. Data collection forms were given to the nurses before and immediately after the case study and collected back. It took nearly 15-20 minutes for individuals to complete the forms.

Data Analysis

The obtained data were analyzed in IBM SPSS Statistics for Windows, Version 19.0. (IBM Corp. Armonk, NY: USA. Released 2010) using frequency, percentage distributions, descriptive

statistics, Chi-square, Mc-Nemar, Independent samples T, and Correlation Tests. The significance value (p) was accepted as <0.05.

In the process of analyzing the qualitative data, the observation notes of the case manager nurses were examined. Later, these notes were analyzed with an inductive approach using NVivo. In this process, first, the data was coded for content analysis, and thematic coding was performed by determining the similarities and differences between the codes. Then, the themes that are related to each other were combined in the same category to form the main themes.

Results

The mean age of the participants was 28.7±6.8%, of whom 82.5% were female, and nearly half (47.6%) were high school graduates. Approximately 2/3 of the nurses (75.7%) work in clinics and 1/3 in intensive care units. The mean total working years of the nurses was 7.7±6.8. All or almost all of the nurses stated that they knew the nursing process (100%), received courses during the nursing training about the nursing process (93.2%), and implemented the nursing process (100%) in their practice. About half of the nurses (46.6%) stated that they had experienced problems implementing the nursing process (Table 1).

Table 1: Descriptive Characteristics of Nurses

Age (±SD)	28.7,8 (21-44 years)	
Total working years (±SD)	7.7,8 (1-32 years)	
Gender	n	%
Female	85	82.5
Male	18	17.5
Education Level		
High School	49	47.6
Associate's degree	14	13.6
Bachelor's degree	40	38.8
Unit		
Clinic	78	75.7
Intensive care	25	24.3
Information on the nursing process	103	100
Receive courses about the nursing process	96	93.2
Implementation the nursing process	102	100
Experience problems implementing the nursing process		
Yes	47	46.6
No	56	54.4
Helpfulness of the case study		
Totally	97	94.2
Partly	6	5.8
Have difficulties in case study		
Yes	28	27.2
No	75	72.8

Although not shown in the table, the descriptive characteristics of those were only significant in terms of the unit they worked, in and that the nurses working in the clinics frequently had problems (51.3%, $X^2=4.136$, $P=0.042$). While implementing the nursing process, nurses often had difficulties obtaining a health history from the patient (65%) and identifying subjective data (68%) during the data collection phase. Approximately half of the participants had difficulties regarding diagnosing stage, and 26.2% had in the planning stages. When nurses, who had difficulties, were compared before and after the case studies, it was found that they had less difficulty in obtaining a health history from the patient and determining the subjective data and the difference was statistically significant ($p<0.05$). About half of the nurses had problems before the case studies, and there was an increase in the frequency of the problems experienced after the case analysis, but this difference was not statistically significant ($p>0.05$). However, there was a significant increase in the frequency of nurses who had problems after the case studies regarding the selection of appropriate interventions in the planning phase (Table 2).

Table 2: Comparison of Nurses' Pretest and Posttest Problems While Implementing the Nursing Process

	Pre-test		Post-test		p
	Yes n(%)	No n(%)	Yes n(%)	No n(%)	
Data collection					
Obtaining a health history from the patient	67(65)	36(35)	46(44.7)	57(55.3)	0.001*
Identifying subjective data	70(68)	33(32)	57(55.3)	57(55.3)	0.035*
Identifying objective data	48(46.6)	55(53.4)	49(47.6)	54(52.4)	1.000
Diagnosing					
Selection of appropriate diagnoses	58(56.3)	45(43.7)	62(60.2)	41(39.8)	0.636
Prioritizing diagnoses	48(46.6)	55(53.4)	51(49.5)	52(50.5)	0.780
Identifying associated factors of diagnoses	50(48.5)	53(51.5)	53(51.5)	50(48.5)	0.761
Identifying descriptive features of diagnoses	53(51.5)	50(48.5)	48(46.6)	55(53.4)	0.551
Specifying expected patient outcomes	41(39.8)	62(60.2)	48(46.6)	55(53.4)	0.311
Planning					
Selection of appropriate interventions	27(26.2)	76(73.8)	43(41.7)	60(58.3)	0.007*

*p<0.05

After the case studies, the total scores of The Perceptions of Nursing Diagnosis Survey and Delineation and Promotion of Nursing Profession subscale had a high positive correlation, while the other subscales showed a moderately significant correlation (Table 3). As a result of the content analysis of the observation notes, three main themes were determined

Table 3: Pre-test and Post-test Mean Total Scores and Correlations of the Perceptions of Nursing Diagnosis Survey Scale and Its Subscales

Scale and subscales	Pre-test $\bar{x} \pm Sd$	Post-test $\bar{x} \pm Sd$	r p
The Perceptions of Nursing Diagnosis Survey	2.4±0.3	2.1±0.4	0.552 0.000*
Delineation and Promotion of Nursing Profession	1.8±0.5	1.7±0.5	0.633 0.000*
Clear representation of patient situation	3.3±0.6	2.7±0.7	0.310 0.001*
Ease of use	2.5±0.6	2.1±0.6	0.320 0.001*
Conceptual orientation	3.0±0.5	2.7±0.7	0.424 0.000*

*p<0.05

“diagnosing”, “data collection”, and “use of reference book”. According to this, “use of standard diagnoses or diagnoses used frequently in the clinic; identifying a diagnosis through the internet, using medical diagnosis, making a diagnosis by rote, and making a diagnosis in line with similar patient care or clinical experience” formed the sub-themes under the diagnosing theme (Figure 1). The following sentences present some examples phrases of this theme.

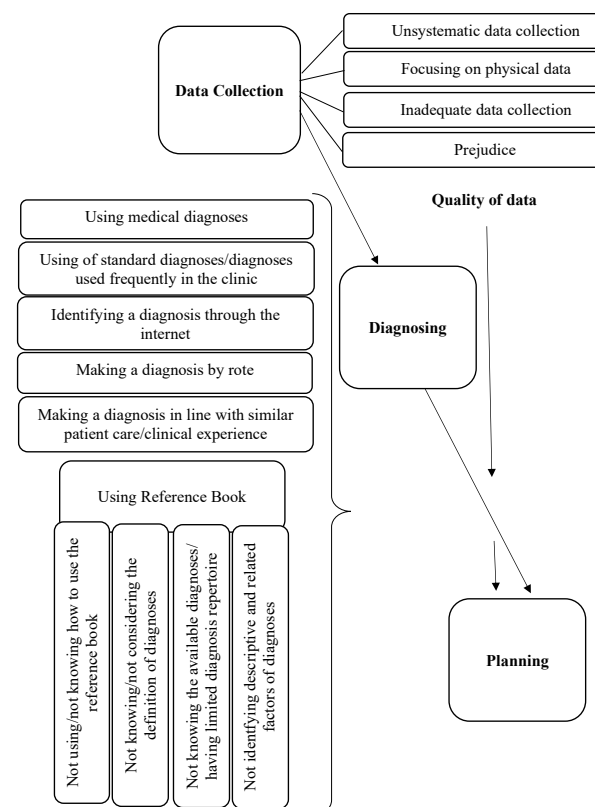


Figure 1: Map based on content analysis of case study reports

“After collecting the data, they opened the nursing diagnostics handbook and started to make the diagnoses. First, they wrote routine diagnoses. Then they decided to expand them.”

“Before; they immediately listed diagnoses as the risk for falls, pain,

the risk for bleeding, impaired skin integrity, the risk for infection.”

“While determining the diagnosis, they started to make it according to their clinical experience without using the nursing diagnoses handbook too much. They did not assess whether the diagnosis was appropriate for the patient. They asked if anyone had ever encountered a similar patient before.”

The sub-themes under the data collection theme are “inadequate data collection; prejudice; focusing on physical data and unsystematic data collection (Figure 1). These themes include some examples of the nurses’ phrases here.

“They tried to determine the diagnoses with small data, and although they discussed the data they saw as incomplete, they did not ask questions.”

“They said there is a risk of falls and bleeding and that a bedridden patient cannot provide personal hygiene. They did not ask additional questions to collect data.”

“They ask more questions about planning medical treatment.”

“The group turns directly to physical consequences. They did not ask additional questions on Self-perception-self-concept and sexuality patterns. They asked the dietitian and pulmonologist had seen the patient.”

“Their questions were specific and focused on a single topic.”

“They did not systematically collect the data. They could not approach it holistically.”

“The group doesn’t know how to collect data, and they don’t collect data based on Gordon’s functional health patterns.”

The themes under the main theme of the use of reference books are as follows: not using the reference book or not knowing how to use the reference book; not knowing or not considering the definition of diagnoses, not knowing the available diagnoses, or having a limited diagnosis repertoire; difficulty in identifying descriptive and related factors (Figure 1). Some of the phrases here referred to these themes.

“The group did not actively use the nursing diagnosis handbook during the diagnostic phase. They didn’t know how to use the book, so they solely checked the name of the nursing diagnosis.”

“They tried to determine whether the diagnosis checking on this was appropriate or not appropriate without reading the definition of nursing diagnoses and looking at their contents.

They asked what kind of diet-related diagnoses.”

“They didn’t focus on diagnostic features or read the diagnosis’ definition or related factors.”

“They focused more on medical diagnoses than nursing diagnosis.”

“They tried to make a lot of diagnoses in numbers while determining the diagnoses. They did not evaluate whether the diagnosis they made was appropriate for the case and in line with the data they collected.”

It was determined that the diagnosis of Bleeding Risk and Disruption in Oral Mucous Membranes were discussed with a frequency of 80% in the case studies groups. It is seen that the diagnoses of Ineffectiveness in Cleaning the Airway, Risk of Loneliness, Lack of Leisure Activity, Deterioration in Comfort, Inadequacy in Maintaining the Housework, and Sedentary Lifestyle are discussed less frequently (Table 4).

Table 4: Nursing Diagnoses Frequently Used During Case Studies

Nursing diagnoses	n	%*
1. Bleeding, Risk for	20	80
2. Oral Mucous Membrane, Impaired	20	80
3. Disturbed Sleep Pattern	19	76
4. Risk for Infection	19	76
5. Risk for Falls/Risk for Trauma	19	76
6. Acute Pain	19	76
7. Skin Integrity, Impaired	19	76
8. Self-Care Deficit Syndrome	18	72
9. Constipation	18	72
10. Anxiety	17	68
11. Activity Intolerance	17	68
12. Nutrition, Imbalances: Less Than body requirements	16	64
13. Excess Fluid Volume	15	60
14. Fear	12	48
15. Deficient Knowledge	10	40
16. Noncompliance	8	32
17. Urinary Elimination, Impaired	7	28
18. Glucose, Risk for Unstable Blood	7	28
19. Mobility, Impaired Physical	7	28
20. Ineffective Airway Clearance	5	20
21. Risk for Loneliness	4	16
22. Deficient Diversional Activity	4	16
23. Comfort, Impaired	3	12
24. Home Maintenance, Impaired	3	12
25. Sedentary Lifestyle	2	8

*Row percent was calculated.

When the case studies groups were examined in terms of the diagnoses that could be made in line with the case study, it was seen that an average of simply 15.4 diagnoses could be identified in the groups; however, only one group could identify 80% (n: 20) of the diagnoses that could be made in line with the case study.

Discussion

Almost all of the nurses participating in the study stated that they knew the nursing process, took courses on the nursing process during their nursing training, and used the nursing process in the clinic. In the study, nurses with up-to-date theoretical knowledge were preferred. Nurses who received nursing process training, especially in orientation training, and

who had at least one year of working experience in terms of using the nursing process were included in the study. However, as stated in the literature, approximately half of the nurses have problems with data collection, diagnosis, and planning stages (Andsoy et al., 2013; Özdemir et al., 2016; Basit, 2020; Karakurt, Ünsal & Yıldırım, 2020; Lotfi et al., 2020). Adraro and Mengistu (2020) stated that the level of education is important in practicing the nursing process. Andsoy et al. (2013) stated that there was a significant difference between nurses' working experience, working style, the clinics they worked in, and the difficulty in performing the process. In the study, a significant difference was found between the state of having problems in implementing the nursing process and the unit where the nurse worked.

All the steps of the nursing process are like the links of a chain that follow each other and interlock. If one of these steps is not performed sufficiently, the chain cannot be completed. The diagnostic phase is also affected by the quality of the data obtained in the previous step and affects the planning of appropriate interventions in the next one (Wilkinson et al., 2016; Karahan & Kav, 2019; Basit, 2020). In this respect, when the findings are examined, it is natural that nurses who have difficulties in taking the patient's history and obtaining subjective data during the data collection phase have difficulties in the diagnosis and planning phase. After the case study, nurses stated that they had less difficulty in collecting data. This difference may be due to the fact that the nurses with the help of the case study experienced more objectively how they could distinguish and question the data about the individual they care for.

One of the important findings of the study is that, contrary to the decrease in the difficulties experienced in data collection, the number of nurses who had problems in the diagnosis stage increased slightly. This remarkable result might also have resulted from perceptions regarding nursing diagnoses (Karakurt et al., 2020; Şahin & Khorshid, 2021), and that the case study was challenging or not helpful. However, in our study, it was observed that there was a significant decrease in the mean scores of the pre-test and post-test of PNDS, and nurses' perceptions of nursing diagnoses were positively affected. However, the majority of the nurses stated that they did not have any difficulties during the study, and they found the study useful. The problem can also be understood well when the behaviors of nurses at the diagnosis stage are examined. At this stage, nurses' behaviors were discussed under three main themes: "data collection", "diagnosis" and "use of reference books". During the data collection phase, it was observed that the nurses did not collect data systematically, acted with prejudices, focused more on physical data and could not collect enough data. The quality of the collected data improves the identification of appropriate nursing diagnoses and the planning of interventions during the diagnostic phase (Wilkinson et al., 2016; Karahan & Kav, 2019; Basit, 2020). Problems that begin at the stage of data

collection cause problems at the diagnostic stage such as rote/automatic/standard diagnosis specific to the disease, not individual. In addition, it was observed that nurses could not use the presented reference book effectively in identifying the nursing diagnoses, and instead of reviewing the definitions, related factors and descriptive features of the diagnoses within the scope of the reference book, they determined nursing diagnoses based on their experiences, online search or the diagnoses frequently used in their clinics. Zeleke et al. (2021) stated in their study that 37.3% of the nurses were able to write at least one nursing diagnosis correctly.

It was considered that the practices observed during the diagnosis process also affected the diagnoses made by the nurses within the scope of the case study. In this context, as stated in the literature, diagnoses related to physical problems such as bleeding risk, infection risk, and falling risk are frequently discussed (Akın Korhan, Hakverdioğlu Yönt, Demiray, Akça & Eker, 2015; Karakurt et al., 2020). In the study, it was predicted that correct interventions could also be determined in line with the identification of individual diagnoses, and it was observed after the case study that the nurses stated that they had more difficulty in choosing the appropriate interventions during the planning phase. Özdemir et al. (2016) similar to our study, stated that 50% of the nurses had problems in prioritizing care and 37.5% had problems in planning interventions.

The increase in the frequency of nurses who stated that they had difficulties in the diagnosis and planning phase can be interpreted as their awareness of the diagnosis phase of the process has increased, but a single case study is not sufficient. In order for the nursing process, which forms the basis of nursing practices, to be used effectively, it is necessary to analyze all the collected data, synthesize it with nursing information, group it and create hypotheses about the health problems of the patient. Nursing science, clinical experiences, and cognitive skills such as critical thinking and problem-solving should be blended into the process. Cachón-Pérez et al. (2021) stated that the nurses participating in the study had difficulties in realizing their nursing diagnoses as follows: "*nurses experience nursing diagnoses as something strange and difficult to understand, alien to their daily care activity. They perceive it negatively. It was even pointed out that nursing diagnosis is imported from another culture and they feel forced to implement it*". In our study, although nurses' perceptions of nursing diagnoses were moderate and there was a more positive change after the case study, it is noteworthy that their practices regarding diagnosis were not in a scientific framework and the diagnoses they made were only partially sufficient.

While the nursing process is taught throughout nursing training and education, it is rarely studied after graduation. In addition, there are many studies stating that nursing students have difficulties in performing the nursing process (Özdemir et al., 2016; Erden, Deniz, Arslan & Yurtseven, 2018; Akman Yılmaz et al., 2019; Akansel & Palloş, 2020). Misbehaviors developed

regarding the implementation of the nursing process during training at school can also be sustained after graduation. For this reason, the effective use of the nursing process should be taught well in nursing training, especially the data collection and diagnosis phase and then the knowledge about the process should be updated with such practical trainings as case studies (Erden et al., 2018; Akman Yılmaz et al., 2019; Karakurt et al., 2020).

Different methods can be used to effectively carry out the nursing process, which significantly affects the quality of care. Methods such as case analysis or case presentation concept maps can be used in the care of various patient groups and in the training and/or evaluation of students.

Limitations

The findings have limited to the nurses who worked in the hospital where the study was conducted. Because the hospital was a private hospital and the turnover rate is considered, different findings can be obtained with nurses working in public and university hospitals, where the number of nurses working for more than one year may be higher.

Conclusion

The nursing process forms the scientific framework of nursing practice. It guides nurses in applying and managing systematic, individual-centered, and quality care. However, good evaluation of the data collection phase of the nursing process, which acts as the backbone of the process, has irreplaceable importance in identifying the problems (diagnosis) of the individual and planning appropriate interventions afterward. Adopting interactive teaching methods in which critical thinking, problem-solving and analysis-synthesis skills such as case studies and concept maps can be used actively in teaching of nursing diagnoses can prevent non-scientific approaches from being taken at the diagnosis stage.

Ethical Considerations: Approval (No:2019/175) was obtained from the Ethics Committee Bolu Abant İzzet Baysal University in order to carry out the research.

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