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C E R R A H P A Ş A

Research Article

Evaluation of Nurses' Perceptions of Nursing Diagnoses and Their Opinions Regarding the Application of Nursing Process

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Abstract

AIM: This study aimed to evaluate nurses' perception of nursing diagnoses and their opinions regarding the application of nursing process and to determine the factors affecting them.

METHOD: This was a descriptive cross-sectional study. The sample consisted of 320 nurses who worked at a foundation university hospital between October and December 2017. The Nurse's Information Form and Nursing Diagnoses Perception Scale were used to collect the research data. The scale included expressions reflecting nurses' perceptions about the use, usefulness, aims, results, objectives, and limitations of nursing diagnoses.

RESULTS: A total of 51.2% of the nurses participating in the study had a bachelor's degree, and the average age was 25.36 ± 4.83 years. More than half of the nurses (50.9%) stated that they had difficulty in the assessment stage of the nursing process and that they diagnosed the risk of infection most frequently (74.4%). The nurses' mean total score on the survey was 2.68 ± 0.44 (2–4). There was a statistically significant relationship between the total mean score of the scale with the sex, education level, and the belief that the nursing process should be used ($p < .001$; $p < .001$; $p < .05$).

CONCLUSION: The nurses' perception of nursing diagnoses was at a moderate level. Positive perception of nursing diagnoses could improve nursing quality by enabling nurses to focus on care.

Keywords: Nursing care, nursing diagnosis, nursing process, perception

Introduction

Caring is the essence of nursing practice, and the management of caring is one of the most important functions of the nursing profession (Domingos et al., 2017). Nursing process, which is the most important tool in nursing care practice, is defined as a systematic and scientific problem-solving method in determining the care needs of individuals and providing individualized care (Abdelkader & Othman, 2017; Ojewole & Samole, 2017). It is also seen as a decision-making approach that treats the individual as a whole in psychological, sociocultural, spiritual, and economic dimensions and encourages critical thinking in nursing (Abdelkader & Othman, 2017; American Nurses Association, 2019; Cruz et al., 2016). Effective implementation of the nursing process improves the quality of care and encourages the creation of theoretical and scientific knowledge

on the basis of best clinical practice (Pokorski et al., 2009; Zamanzadeh et al., 2015). In the first step of the nursing process, the assessment stage, it is important to use all sources of information about the individual and to analyze and use the obtained data (Erden et al., 2018; Kaya, 2013). The second stage of the nursing process, which is the nursing diagnoses, reveals the needs and problems of the individual and determines the areas and subjects that the nurse will be interested in to enable the planning and implementation of interventions appropriate to the nursing diagnoses (Velioğlu, 2012).

Nursing diagnosis facilitates the solution of an individual's problem by providing guidance on nursing practices about what needs to be done when faced with problems and enables the systematic care of the patient (Hakverdioğlu et al., 2009). Despite positive contributions to the nursing profession and the

quality of care and it being emphasized during the education process and legal regulations, it is reported that nurses cannot apply the nursing process effectively and have difficulty during the application period owing to various reasons (Semachew, 2018; Zamanzadeh et al., 2015; Zaybak et al., 2016). The difficulties experienced in the implementation and documentation of the nursing process may arise from the characteristics of the nurses, the care environment, and the healthcare system (Abdelkader & Othman, 2017; Akın Korhan et al., 2013). Therefore, to conduct nursing practices on the basis of scientific and clinical evidence, it is important that the nursing process is understood and internalized by each nurse and that each nurse acquires skills and competence in the use of this process (Zamanzadeh et al., 2015).

This study aimed to evaluate nurses' perception of nursing diagnoses and their opinions regarding the application of nursing process and to determine the effective factors. Thus, increasing the awareness of nurses about the nursing process is thought to contribute to the provision of patient care in line with the individual care needs and the improvement and development of the quality of care.

Research Questions

1. What is the level of perception of nurses on nursing diagnoses?
2. What are the nurses' opinions on implementing the nursing process?
3. Is there a difference in the level of perception of nurses on nursing diagnoses, according to the sociodemographic and professional characteristics of the nurses and their opinions on the implementation of the nursing process?

Method

Study Design
This was a descriptive cross-sectional study.

Sample
This study was conducted in a foundation university hospital in Istanbul. The research universe consisted of 450 nurses, of whom 320 (71%) nurses who worked in this hospital (internal medicine, surgery and obstetrics, intensive care unit, emergency room, operating room, and outpatient clinics) between October and December 2017 agreed to participate in the study. Nurses who refused to participate and could not be contacted for various reasons (such as being on a sick leave, on leave, and others) were excluded from the study.

Data Collection
The data were collected using a survey. The questionnaires were distributed to the nurses in the relevant units by the researchers. Before completing the forms, the nurses were informed of the purpose of the study and the confidentiality of the data, and explained that the completion of this form would take just 15 minutes. The completed forms were then collected by hand.

Data Collection Tools
The Nurse's Information Form and the Nursing Diagnoses Perception Scale (NDPS) were used to collect the research data.

Nurse's Information Form: This form, which was prepared by the researchers on the basis of the literature (Akın Korhan et al., 2013; Dennis Ngao, 2015; Kaya, 2013; Zaybak et al., 2016), included 2 sections-sociodemographic and professional characteristics and practices related to nursing process and 13 questions.

Nursing Diagnoses Perception Scale: This scale, developed (as cited in Frost et al. 1991), was adapted to Turkish by Akın Korhan et al. (2013). The scale includes expressions reflecting nurses' perceptions about the use, usefulness, aims, results, objectives, and limitations of nursing diagnoses, which included their perceptions of the effect of diagnoses on definition and promotion of nursing profession (9 items), perceptions of clear definition of patient status (7 items), perceptions of diagnoses of ease of use (6 items), and perceptions of the conceptual aspect of diagnosis (4 items). The scale is a 5-point Likert scale, and the score is calculated as follows: 1 point for strongly agree, 2 for agree, 3 for undecided, 4 for disagree, and 5 for strongly disagree, and calculated by dividing the total points by the number of items. The total score ranges from 1–5. The total score obtained from the scale is minimum "1" and maximum "5." Nursing diagnoses are perceived negatively as the total score of the scale increases. A low total score indicates that nursing diagnoses are perceived positively by the nurses.

Turkish validity and reliability study of the scale was performed, and its internal consistency reliability coefficient was found to be .84, and the Cronbach's

alpha value of the subscales was found to range between .30 and .91. In this study, the Cronbach's alpha value for the whole scale was found to be .82, and the internal consistency reliability coefficients of the subscales were as follows: definition and promotion of nursing profession = .84, clear definition of patient status = .76, ease of use = .73, and conceptual aspect = .63.

Statistical Analysis

The data obtained from the research were analyzed using Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) 16.0 program. Percentage, arithmetic mean, frequency, and standard deviation were used as descriptive statistical methods in the evaluation of data. The compatibility of data with normal distribution was tested with one sample Kolmogorov-Smirnov test; and as the significance values were less than .05, nonparametric tests were used for advanced analysis. Among nonparametric tests, Mann-Whitney U test was used to compare quantitative continuous data between 2 independent groups, Kruskal-Wallis test was used to compare quantitative continuous data between more than 2 independent groups, and Spearman's correlation coefficients were used for the correlation analysis.

Ethical Considerations

To conduct the study, the ethics committee approval (decision no: 04.07.2017/60-12) was obtained from the Istanbul Bilim University Clinical Research Ethics Committee, the institution approval was obtained from the hospital where the research was conducted, and the scale approval was obtained to use the scale in this research. In addition, informed consents were obtained from nurses who agreed to participate in the study.

Results

The mean age of the nurses participating in the study was 25.36 ± 4.83 years; 80.3% of the nurses were women and 51.2% had a bachelor's degree. Of the nurses included in the sample, 33.8% worked in internal and surgical clinics and 91.6% worked as clinical nurses. The average working time of the nurses in the profession was 4.68 ± 4.23 years, and the average working time in the unit they worked in was 3.53 ± 2.96 years (Table 1).

A majority of nurses (97.5%) received training on nursing process practices. Accordingly, 60% stated that they received vocational training and 57.8% stated that they received it during in-service training. Assessment (50%), diagnosis (31.9%), planning (15.9%), implementation (9.7%), and evaluation (6.3%) were the most difficult stages for the nurses when using the nursing process and the first 3 nursing diagnoses they used most frequently were infection risk (74.4%), fall risk (59.1%), and lack of knowledge (55.9%). In this study, 93.4% of the participants stated that the nursing process should be used when providing care (Table 2).

In this study, the total score average of NDPS was found to be 2.68 ± .44 (2–4). The distribution of the subscale mean scores is shown in Table 3. When the scale was analyzed according to the item mean scores, the item that the nurses perceived in the nursing diagnoses most positively was, "Nursing diagnoses improve

Table 1

Distribution of Nurses by SocioDemographic Characteristics (n = 320)

Characteristic	Category	n	%
Age (years)	Mean: 25.36 ± 4.83 (Range: 18–45)		
Sex	Female	257	80.3
	Male	63	19.7
Education level	Vocational health school	81	25.3
	Associate degree	48	15.0
	Bachelor's degree	164	51.2
	Postgraduate and above	27	8.4
Work unit	Internal medicine-surgery clinic	108	33.8
	Emergency unit	29	9.1
	Intensive care unit	49	15.3
	Operating room	37	11.6
	Polyclinic	11	3.4
	Other	86	26.9
Position	Clinical nurse	293	91.6
	Supervisor nurse	15	4.7
	Executive nurse	2	.6
	Training nurse	3	.9
	Other	7	2.2
Duration of work in this profession	Mean: 4.68 ± 4.23 (Range: 1–25 years)		
Duration of working time in the unit	Mean: 3.53 ± 2.96 (Range: 1–20 years)		

the professional image of nursing" (2.01 ± .96), where-as the item that they perceived most negatively was, "Nursing diagnoses are complementary to medical diagnoses" (3.71 ± 1.02) (Table 4).

Table 2

Nurses' Opinions on Nursing Process Applications (n = 320)

Characteristic	Category	n	%
Education status on nursing process	Yes	312	97.5
	No	6	1.9
Training place	Training process	192	60.0
	Congress	38	11.9
	In-service training	185	57.8
	Other	12	3.8
Using nursing process when giving care	Yes	290	90.6
	No	29	9.1
Believe that the nursing process should be used when giving care	Yes	299	93.4
	No	20	6.3
The most difficult stages in nursing process	Assessment	163	50.9
	Diagnoses	102	31.9
	Planning	51	15.9
	Implementation	31	9.7
	Evaluation	20	6.3
Nursing diagnoses mostly used	Infection risk	238	74.4
	Lack of knowledge	179	55.9
	Falling risk	189	59.1
	Malnutrition	62	19.4
	Shortness of breath	79	24.7
	Impaired skin integrity	99	30.9
	Anxiety	91	28.4
	Other	14	4.4

Table 3

Distribution of Nursing Diagnosis Perception Scale Scores (n = 320)

Subscale	M	± SD	Min	Max
Definition and promotion of nursing profession	2.30	.64	1	5
Clear definition of patient status	2.71	.71	1	5
Ease of use	2.98	.50	1	5
Conceptual aspect	3.04	.48	2	5
NDPS score	2.68	.44	2	4

The findings regarding whether the scale scores of the nurses vary according to independent variables are shown in Table 5. When the NDPS was compared according to the sex of the nurses, definition and promotion of nursing profession, clear definition of patient status, ease of use subscales, and NDPS total mean scores of male nurses were found to be higher (2.60 ± .78, 2.97 ± .83, 3.18 ± .52, and 2.90 ± .52, respectively) than the scores of female nurses (2.23 ± .59, 2.65 ± .67, 2.93 ± .49, and 2.63 ± .40, respectively), and the differences were significant (p < .001; p < .01; p < .01; p < .001, respectively).

According to the results of the analysis, definition and promotion of nursing profession, ease of use subscales, and NDPS total mean scores of nurses with an education level of vocational school of health or an associate degree were significantly higher than the scores of nurses with a bachelor's or postgraduate degrees (p < .001).

This study, the definition and promotion of nursing profession subscale and NDPS total mean scores of nurses who did not believe that nursing process should be used when providing care were found to be higher (2.63 ± 0.63 and 2.95 ± 0.57, respectively) than the scores of nurses who believed that the use of nursing process when providing care was necessary (2.28 ± 0.64 and 2.66 ± .43, respectively), and the differences were significant (p < .01; p < .05, respectively).

There was no statistically significant relationship between the NDPS scores based on the age of nurses, working time in the profession, working time in the unit they worked in, and the training status related to the nursing process (p > .05).

Discussion

The diagnostic stage in the nursing process forms the basis of care. However, the extent to which nursing diagnoses are used correctly in nursing practice has always been a subject of discussion. One of the most important reasons for this may be the complexity of the subject and the difficulty to comprehend it, as well as the difference in the information received during the training and the level of education of the nurses. The knowledge of perceptions of nursing diagnosis, which forms the basis of the nursing process, can guide the planning and implementation of correct nursing processes, and plays a role in improv-

ing the quality of care. In this study, the perception of nursing diagnoses was found to be moderate. The positive perceptions of nurses about nursing diagnoses suggest that they will make important contributions to the scientific development of the profession and professionalization process.

Nurses' Characteristics about Nursing Process

The nursing process is critical to acquire sufficient knowledge to practice nursing (Afolayan et al., 2013). The knowledge and skills that nurses should have in order to use the nursing process are acquired during nursing education, and the nurses are expected to

Table 4
Distribution of Nurses' Scores on Nursing Diagnosis Perception Scale Items (n = 320)

Scales	M	± SD
Definition and promotion of nursing profession		
Item 8. Nursing diagnoses support the development of autonomy of the profession/nursing.	2.16	1.02
Item 9. Nursing diagnoses treat the patient from a holistic perspective.	2.10	.98
Item 11. Nursing diagnoses improve the responsibility (accountability) of nursing.	2.15	.97
Item 13. Nursing diagnoses enable the nurse to focus on nursing-specific areas.	2.12	.92
Item 14. Nursing diagnoses improve the professional image of nursing.	2.01	.96
Item 15. Nursing diagnoses show what nurses are doing.	2.20	1.05
Item 18. Nursing diagnoses guide nursing care.	2.08	.88
Item 19. Nursing diagnoses are complementary to medical diagnoses.	3.71	1.02
Item 20. Nursing diagnoses make it easy to record basic data.	2.18	.95
Clear definition of patient status		
Item 3. I clearly understand the patient's condition when I look at the nursing diagnoses of the patient.	2.52	1.04
Item 4. Nursing diagnoses facilitate collaboration among healthcare team members.	2.22	1.10
Item 5. Doctors, pharmacists, physiotherapists, and other healthcare team members know what nursing diagnoses mean.	2.72	1.14
Item 7. Nursing diagnoses provide nurses with as much information as medical diagnoses that provide doctors.	2.37	1.02
Item 17. When I examine a patient's nursing diagnoses, I usually cannot be sure what the problem the patient has.	2.97	1.11
Item 23. Patients know their own nursing diagnoses.	3.24	1.19
Item 24. I use nursing diagnoses, not medical diagnosis, to inform other nurses about the patient's condition.	2.92	1.15
Ease of use		
Item 1. It is easy to use the nursing diagnoses.	2.34	1.07
Item 10. Development of nursing diagnoses is time consuming.	3.59	1.01
Item 16. Nursing diagnoses are more difficult to use than medical diagnoses.	3.04	1.15
Item 21. I generally approve nursing diagnoses identified by other nurses.	2.60	1.01
Item 22. It is often difficult to determine appropriate nursing diagnoses after patient evaluation.	3.00	1.06
Item 26. Most nursing diagnoses are the result of renaming medical diagnoses.	3.30	.97
Conceptual aspect		
Item 2. When planning caring, I usually consider nursing diagnoses rather than medical diagnoses.	2.69	1.03
Item 6. Medical diagnoses provide more convenient (useful) information than nursing diagnoses.	3.45	1.01
Item 12. Nursing diagnoses give me more practical information than medical diagnoses.	2.54	1.02
Item 25. I understand a patient's condition more clearly when I look at the patient's medical diagnoses rather than nursing diagnoses.	3.46	.97

use this knowledge and skills in their professional lives (Şendir et al., 2009). Among the aims of nursing schools providing a bachelor's degree in Turkey, one is to train professional nurses who determine the nursing care needs of individuals and who can plan, implement, and evaluate the necessary nursing care. Therefore, 1 of the ways to increase the number of nurses working with the nursing process in their

Table 5

Comparison of Nursing Diagnosis Perception Scale Scores According to Independent Variables (n = 320)

	N	Definition and Promotion of Nursing Profession		Clear Definition of Patient Status		Ease of Use		Conceptual Aspect		NDPS Score	
		M	± SD	M	± SD	M	± SD	M	± SD	M	± SD
Sex											
Female	257	2.23	.59	2.65	.67	2.93	.49	3.02	.48	2.63	.40
Male	63	2.60	.78	2.97	.83	3.18	.52	3.08	.49	2.90	.52
Zmwu		-4.027		-2.700		-3.363		-.376		-4.043	
p		.000		.007		.001		.707		.000	
Education level											
[a]Vocational health school	81	2.50[(c,d)]	.59	2.79	.76	3.11[(c,d)]	.50	3.11	.41	2.81[(c,d)]	.46
[b]Associate degree	48	2.51[(c,d)]	.68	2.87	.74	3.16[(c,d)]	.50	3.01	.52	2.83[(c,d)]	.46
[c]Bachelor's degree	164	2.18	.62	2.62	.68	2.89	.48	3.03	.49	2.59	.40
[d]Post-graduate and above	27	2.10	.66	2.72	.66	2.78	.50	2.91	.52	2.55	.42
Xkw		33,776		5,298	20,93	3,271	24,068				
p		.000		.151		.000		.352		.000	
Education status on nursing process											
Yes	312	2.30	.64	2.71	.71	2.97	.51	3.04	.48	2.68	.44
No	6	2.43	.75	3.05	.59	3.22	.33	2.96	.66	2.86	.53
Zmwu		-1.312		-1,384		-1.167		-.494		-1.337	
p		.189		.166		.243		.621		.181	
Using nursing process while giving care											
Yes	290	2.28	.65	2.67	.71	2.96	.50	3.02	.48	2.66	.43
No	29	2.46	.54	3.06	.69	3.22	.42	3.19	.52	2.91	.44
Zmwu		-1.810		-2.701		-2.781		-1.804		-3.144	
p		.070		.007		.005		.071		.002	
Believe that the nursing process should be used when giving care											
Yes	299	2.28	.64	2.69	.70	2.97	.50	3.03	.47	2.66	.43
No	20	2.63	.63	3.05	.89	3.18	.48	3.20	.58	2.95	.57
Zmwu		-2.772		-1.623		-1.878		-1.238		-2.117	
p		.006		.105		.060		.216		.034	
		r_s	p	r_s	p	r_s	p	r_s	p	r_s	p
Age		-.004	.937	.015	.784	-.11	.051	-.009	.875	-.033	.550
Duration of work in this profession		.076	.178	-.011	.852	-.092	.100	-.043	.439	-.001	.990
Duration of working time in the unit		.100	.075	-.008	.884	-.052	.352	-.011	.839	.038	.502

Note. Zmwu = Mann-Whitney U test; Xkw = Kruskal-Wallis test, r_s = Spearman's correlation

practice is to train nurses who comprehend the philosophy of nursing process and know how to apply it in basic nursing programs. In this study, 97.5% of the nurses stated that they received training related to the nursing process; a majority (60%) of the nurses received this training during their vocational training and more than half (57.8%) received during other trainings (congress, seminar, in-service training, and so on). Education related to the nursing process is given from the first grade in the schools providing a bachelor's degree in Turkey. Therefore, it can be concluded that the rate of education received during vocational training should be higher. As a matter of fact, in the study conducted by Olmaz and Karakurt (2019), a majority of the nurses (93.1%) stated that they received theoretical training about nursing process during vocational education. In this study found that a high number of nurses who were vocational school of health or associate degree graduates (40.3%) may have affected this situation. The data obtained from this research also show that the training received during the education course was supported by other trainings (congresses, seminars, in-service training, and so on). Similarly, in a study conducted by Dennis Ngao (2015), most of the nurses (61.2%) who had been trained, reported that they received training on the nursing process in college, 15.7% were trained during seminars, and 8.2% received on job training. Dennis Ngao (2015) also stated that the lack of continuous updation in nursing process training is the biggest obstacle in the nursing process implementation process. These results emphasize that the nursing process, which constitutes the scientific aspect of nursing and reflects nursing models and theories to practice, takes place at any stage of vocational training and/or posttraining, and the importance of continuing education programs after vocational training is also emphasized.

In this study, a majority of the nurses (93.4%) believed that the nursing process should be used when providing care. Similarly, Olmaz and Karakurt (2019) also found that a large proportion of the nurses (94.7%) believed that the nursing process should be used when providing care in the clinic, Kaya et al. (2010) determined this rate to be 77.8%, and Zaybak et al. (2016) determined this rate to be 78.8% in their respective studies. These results suggest that it is important to gain and transfer knowledge and skills related to the nursing process. However, the lack of time to implement the nursing process because of inadequate practical knowledge, plurality of

patients, lack of support from authorities to implement the nursing process, assignment of non-nursing duties to nurses, high workload, and lack of nursing personnel are the main barriers to implement the nursing process (Afolayan et al., 2013).

It is necessary to continuously evaluate how the nursing process works in health services (Aseratie et al., 2014). Inadequacy of nursing process practice in general or at any stage will be negatively reflected in the care given. Therefore, determining the difficulties experienced to provide the desired level of nursing care is the most important step (Zaybak et al., 2016). In this study, it was seen that nurses experienced most problems in the assessment stage (50.0%) and then in the diagnosis stage (31.9%), whereas the least problems in were experienced in the evaluation stage (6.3%). On the basis of these results, the awareness of nurses about the assessment stage should be increased. As it provides the basis for all stages of the nursing process, it is important to ensure complete and accurate assessment to provide correct and safe care because a problem at this stage will cause misinterpretation of all stages. A nurse who fails to obtain correct and sufficient data would make a wrong nursing diagnosis, and thus identify wrong nursing interventions and might follow an incorrect practice process. The nurse will not be able to solve the problem as the evaluation cannot be done correctly as a result of the inaccurately practiced stages. Therefore, problems in the assessment stage will prevent the process from proceeding in a correct and safe manner. Unlike this study, some studies (Andsoy et al., 2013; Pokorski et al., 2009; Zaybak et al., 2016) found that nurses experienced a great difficulty in the diagnosis stage. In few other studies, it was seen that nurses experienced problems at various stages of the process (Hao et al., 2013; Wagoro & Rakuom, 2015). As a result, nurses' experiencing problems at different stages of the process will be affected in regard to the correct use of nursing process negatively. Therefore, it is important to identify the difficulties experienced by nurses in their practice and to make necessary improvements in the nursing process.

For nurses to be able to approach patients holistically and provide quality care, it is necessary to recognize their problems accurately, to take initiatives for these problems, and to use the nursing process in patient care (Terzi & Kaya, 2011). Unless the patient's existing problems are detected in patient care, nursing in-

terventions to solve the problems cannot be planned appropriately, and will end up in deficiencies in the quality of care the patient receives. In this study, the most frequently used nursing diagnoses of the nurses participating in the study were infection risk, fall risk, and lack of knowledge, respectively. In a study conducted by Akın Korhan et al., (2015), the lack of knowledge, risk of infection, and inadequate individual care were the most common diagnoses; whereas in a study conducted by Salgado and Chianca (2011) about the use of nursing diagnoses in the intensive care unit, stated that the 3 diagnoses used in all patients were inadequate individual care, infection risk, and constipation risk. Erden et al. (2018) identified infection risk, pain, and anxiety as the most common problems in surgical clinics. In some studies (Hakverdioğlu et al., 2009; Türen et al., 2017), infection risk was reported to be the most recorded nursing diagnosis. As seen in these studies, although there are different patient profiles, the most recorded nursing diagnosis is the infection risk. It can be that the most common reason to make this diagnosis most frequent is the possibility of infection in each hospitalized patient, and thus help in taking the necessary precautions. It is seen that the diagnoses obtained from this study and other studies mostly focus on the physiological field, and the data cannot be analyzed in a way to provide a holistic nursing care. In this context, it may be useful to analyze the data with clinical case samples that allow a holistic view and to support them with in-service trainings.

Comparison Perception of Nursing Diagnosis Scale between Characteristics of Nurses, Nursing Process

There was no significant difference between the NDPS scores of the nurses on the basis of age, duration of work in the profession, duration of work in the unit where they worked, and the status of receiving education about the nursing process. Akın Korhan et al. (2013) performed a study to test the validity and reliability of the scale and did not find a statistically significant difference between the total mean NDPS scores and age groups. Similarly, in another study (Hagos et al., 2014), no significant relationship was found between age and nurses' attitudes toward the nursing process. In contrast to this study, Olmaz and Karakurt (2019) found that the number of correct answers given to questions related to the nurses' knowledge about the nursing process in the age range of 25–34 was higher than the others (under 25 years and between 35–44 years). In the study

conducted by Dennis Ngao (2015), the nurses who were younger were more likely to practice the nursing process than those who were older. It is seen that different results were obtained from these studies.

In this study, the male nurses had higher scores than the female nurses. We believe that the reason for this issue should be investigated, and the participation of male nurses in training programs should be ensured. A study conducted by Olmaz and Karakurt (2019) also found that the number of correct answers to theoretical knowledge questions about the nursing process given by women was higher than those given by men.

According to this study, the nurses who graduated from vocational school of health or those with an associate degree had higher scores than the scores of nurses who had bachelor's or postgraduate degrees. The study conducted by Olmaz and Karakurt (2019) revealed that the number of correct answers to knowledge questions about the nursing process given by nurses with a bachelor's or postgraduate degree was higher than those given by other school graduates (vocational health school and associate degree). The ability to make accurate nursing diagnoses in the nursing process in this context is closely related to the ability to apply scientific problem-solving methods and to think critically. It is expected that these characteristics will be found in nurses with a bachelor's or postgraduate degrees, rather than in nurses with vocational health school or associate degrees as nursing process is 1 of the most emphasized subjects in bachelor's and postgraduate degree courses and is supported by practice. In another study (Hagos et al., 2014), the knowledge of the respondents on the nursing process has been found to have a significant relationship with their educational status. Compared with the knowledge of nurses with a diploma, the knowledge of nurses with a bachelor's degree on the nursing process was found to be approximately 11.5 times higher. However, a study conducted by Akın Korhan et al. (2013) found that the scores obtained by the nurses from the scale did not change on the basis of the educational level, and no statistically significant difference was found.

In this study, no statistically significant difference was found between NDPS scores and nurses' working time. The results of the study conducted by Hagos et al. (2014) are in parallel with this study, and

no significant relationship was detected between the working years and nurses' attitudes toward the nursing process. Another study (Andsoy et al., 2013) revealed that as the working years increased, there was less difficulty in using a care plan. This could be because the nurses are expected to experience more cases as the years of experience increase.

Study Limitations

This study was limited to the nurses working in the hospital who agreed to participate in the study. In this study, the perceptions of nurses about nursing diagnoses within the scope of the nursing process were evaluated according to a valid and reliable scale. Findings related to other stages of nursing process are limited to other information in the nurse's information form.

Conclusion and Recommendations

Nurses' perception of nursing diagnoses was at a moderate level in this study. A majority of nurses stated that the nursing process should be used when caring for a patient. Almost all of the nurses stated that they have received the nursing process training, and more than half of them received this training in vocational training process. When caring for a patient, the nurses said that they experienced most difficulties in the assessment stage and that the most frequently used nursing diagnosis was the risk of infection. This study also found that male nurses and nurses with vocational health school and associate degree perceive nursing diagnoses negatively.

Therefore, it is important to organize continuous training programs to update the nurses' knowledge about the nursing process and to increase their level of knowledge on the issues they are inadequate in. To ensure the effective and correct use of the nursing process in all units, the unit responsible and institution manager nurses have great responsibilities. Participation of all nurses, especially male nurses and nurses with vocational health school and associate degree, in the training programs related to the nursing process should be supported. In addition, it may be useful to work on clinical case samples that allow nurses to analyze and integrate data to develop diagnostic skills that require data analysis, synthesis, and decision-making skills.

In conclusion, positive perception of nursing diagnoses will positively affect the identification of patient problems, the planning of nursing interventions and increase patient care quality and satisfaction.

References

Abdelkader, F. A., & Othman, W. N. E. (2017). Factors affecting implementation of nursing process: Nurses' perspective. *IOSR Journal of Nursing and Health Science, 6*(3), 76-82. [Crossref]

Afolayan, J. A., Donald, B., Baldwin, D. M., & Onasoga, O. (2013). Evaluation of the utilization of nursing process and patient outcome in psychiatric nursing: Case study of psychiatric Hospital Rumuigbo, Port Harcourt. *Advances in Applied Science Research, 4*(5), 34-43.

Akın Korhan, E., Hakverdioğlu Yönt, G., Ak, B., & Erdemir, F. (2013). Analysis of Turkish validity and reliability of perception of nursing diagnosis. *Journal of Research and Development in Nursing, 15*(3), 13-25.

Akın Korhan, E., Hakverdioğlu Yönt, G., Demiray, A., Akça, A., & Eker, A. (2015). Determination of nursing diagnoses in the intensive care unit and evaluation according to Nanda diagnoses. *Journal of Duzce University Health Siences Institute, 5*(1), 16-21.

American Nurses Association. (2019). The nursing process. Retrieved from https://www.nursingworld.org/practice-policy/workforce/what-is-nursing/the-nursing-process/

Andsoy, I. I., Güngör, T., Dikmen, Y., & Nabel, E. B. (2013). Difficulties that nurses have in using care plan. *Journal of Contemporary Medicine, 3*(2), 88-94.

Aseratie, M., Murugan, R., & Molla, M. (2014). Assessment of factors affecting implementation of nursing process among nurses in selected governmental hospitals, Addis Ababa, Ethiopia; Cross Sectional Study. *Journal of Nursing and Care, 3*(3), 1-8.

Cruz, D. A. L. M., Guedes, E. S., Santos, M. A., Sousa, R. M. C., Turrini, R. N. T., Maia, M. M., Araújo, S. A. N. (2016). Nursing process documentation: Rationale and methods of analyti-

cal study. *Revista Brasileira de Enfermagem, 69*(1), 183-189. [Crossref]

Dennis Ngao, M. (2015). *Assessing barriers to implementation of nursing process among nurses working at machakos level 5 hospital* (Master's thesis, The University of Nairobi, Kenya). Retrieved from https://pdfs.semanticscholar.org/4970/ 1426943b228ae54cd0f6ea359355be5e4807. pdf?_ga=2.52967144.1136644539.1582960567-1533130857.1566409094

Domingos, C. S., Boscarol, G. T., Brinati, L. M., Custódio Dias, A., Souza, C. C., & Salgado, P. O. (2017). The application of computerized nursing process: Integrative review. *Enfermeria Global, 48*, 637-652.

Erden, S., Deniz, S., Arslan, S., & Yurtseven, Ş. (2018). Examination of nursing diagnoses levels in surgical diseases nursing lesson practices of nursing students. *Van Medical Journal, 25*(2), 108-112. [Crossref]

Hagos, F., Alemseged, F., Balcha, F., Berhe, S., & Aregay, A. (2014). Application of nursing process and its affecting factors among nurses working in mekelle zone hospitals, Northern Ethiopia. *Nursing Research and Practice*, 1-8. [Crossref]

Hakverdioğlu, G., Khorsid, L., & Eşer, İ. (2009). Examination of nursing diagnoses used by nursing students and their opinions about nursing diagnoses. *International Journal of Nursing Terminologies and Classifications, 20*(4), 162-168. [Crossref]

Hao, A. T., Wu, L. P., Kumar, A., Jian, W. S., Huang, L. F., Kao, C. C., Hsu, C. Y. (2013). Nursing process decision support system for urology ward. *International Journal of Medical Informatics, 82*(7), 604-612. [Crossref]

Kaya N. (2013). *Nursing process.* In Z. Durna (Ed.), *Internal Medicine Nursing* (pp. 45-78). İstanbul: Academy Press.

Kaya, N., Babadağ, K., Yeşiltepe Kaçar, G., & Uygur, E. (2010). Nurses' nursing model / theory, nursing process, and classification systems know and implication status. *Maltepe University Journal of Nursing Science and Art, 3*(3), 24-33.

Ojewole, F. O., & Samole, A. O. (2017). Evaluation of the nursing process utilization in a teaching hospital, Ogun State, Nigeria. *Journal of Nursing and Midwifery Sciences, 4*(3), 97-103. [Crossref]

Olmaz, D., & Karakurt, P. (2019). The extent to which nurses knowledge and apply the nursing pocess when giving care.

Dokuz Eylul University Faculty of Nursing Journal of Electronics, 12(1), 3-14.

Pokorski, S., Moraes, M. A., Chiarelli, R., Costanzi, A. P., & Rabelo, E. R. (2009). Nursing process: From literature to practice. What are we actually doing? *Revista Latino-Americana de Enfermagem, 17*(3), 302-307. [Crossref]

Salgado, P. O., & Chianca, T. C. M. (2011). Identification and mapping of the nursing diagnoses and actions in an Intensive Care Unit. *Revista Latino-Americana de Enfermagem, 19*(4), 928-935. [Crossref]

Semachew, A. (2018). Implementation of nursing process in clinical settings: The case of three governmental hospitals in Ethiopia, 2017. *BMC Research Notes, 11*(173), 1-5. [Crossref]

Şendir, M., Acaroğlu, R., & Aktaş, A. (2009). The knowledge and views of fourth class nursing school students about nursing process. *Florence Nightingale Journal of Nursing, 17*(3), 166-173.

Terzi, B., & Kaya, N. (2011). Nursing care of critically ill patients. *Turkish Journal of Intensive Care Medicine*, 1, 21-25. [Crossref]

Türen, S., Çetinkaya Işık, F., Uzun Morgül, N., & Atakoğlu, R. (2017). Nursing diagnoses for heart failure patients in coronary care unit and evaluation of NANDA compliance. *Journal of Cardiovascular Nursing, 8*(17), 115-120. [Crossref]

Velioğlu, P. (2012). *Concepts and theories in nursing.* İstanbul: Academy Press.

Wagoro, M. C. A., & Rakuom, C. P. (2015). Mainstreaming Kenya-nursing process in clinical settings: The case of Kenya. *International Journal of Africa Nursing Sciences*, 3, 31-39. [Crossref]

Zamanzadeh, V., Valizadeh, L., Tabrizi, F. J., Behshid, M., & Lotfi, M. (2015). Challenges associated with the implementation of the nursing process: A systematic review. *Iranian Journal of Nursing and Midwifery, 20*(4), 411-419. [Crossref]

Zaybak, A., Günay İsmailoğlu, E., & Özdemir, H. (2016). Examining the difficulties experienced by nurses in the nursing process applications. *Journal of Anatolia Nursing and Health Sciences, 19*(4), 269-277.