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## The Opinions of Nursing Students Regarding the Nursing Process and Their Levels of Proficiency in Turkey

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### ABSTRACT

**Introduction:** Nursing process, as a scientific method of nursing practice, is an important tool for putting nursing knowledge into practice which increases the quality of nursing care. The study was aimed to determine the opinions of nursing students regarding the nursing process and their levels of proficiency.

**Methods:** A total of 44 nursing students participated in this descriptive study. Data were collected by a three-part questionnaire including the opinion of students on nursing process, Gordon's functional health patterns model and the NANDA diagnoses. Data were analyzed by SPSS software.

**Results:** Most of the students (65.9%) believed that the nursing process was necessary. half of the students explained the diagnosis, 58.3% explained the planning, 41.3% explained the implementation, and 43.6% explained the evaluation sufficiently.

**Conclusion:** It is suggested for instructors to use different teaching methods in order to develop critical thinking while teaching the nursing process.

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### Introduction

The advancements in technology lead to the emergence of new diseases and changes in health care needs. The demand for high quality nursing care increases with each passing day.<sup>1,2</sup> The quality of nursing care services increase patient satisfaction and the quality of health in general.<sup>3</sup> Therefore, nurses have to provide effective care for their patients by using up-to-date knowledge.

High quality nursing care is based on the systematic scientific methods and theoretical knowledge.<sup>4</sup> The nursing process, which is the most important tool for putting nursing knowledge into practice, is a systematic problem solving method for determining the health care

needs of an healthy or ill individual and for providing personalized care.<sup>5-7</sup> It is recommended to use the nursing process as a scientific method in guiding the quality of nursing care and nursing practices.<sup>8</sup> The nursing process has many benefits for the individual who is receiving care, the nurse, and the nursing student. The nursing process provides that individual-centered care is given in accordance to a plan and that time is used in a more effective way while promoting communication between team members and increasing the quality of nursing care by providing written resources and evidence for nursing education and research.<sup>6,7,9,10</sup> In addition, it promotes critical thinking, creativity, problem solving, and decision making skills in clinical practice.<sup>8,11,12</sup> Providing care via the

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use of nursing process increases the quality of care and in turn, increases the level of satisfaction in individuals who receive care.<sup>13</sup>

The nursing process, as a dynamic approach, consists of five stages that are related to each other. These stages include assessment, nursing diagnosis, planning, implementation, and evaluation.<sup>8</sup> In the assessment stage, which provides a basis for all stages of the nursing process, data collection should be done in an accurate, objective, and complete way.<sup>14</sup> Therefore, it is important to have an appropriate model for data collection. Various models were developed by theoreticians in the national and international arena in order to collect data from healthy or ill individuals or their families in a systematic and comprehensive way. One of these models is the Functional Health Patterns (FHP) model. The FHP model, which is a nursing care model that evaluates individuals in a holistic way, was developed by the nursing theoretician Marjory Gordon in 1982.<sup>14</sup> This model examines the needs of an individual under 11 functional areas that are related to each other and facilitates collecting and analyzing data in an accurate, objective, and complete way. The FHP model determines an individual's or family's previous coping skills and positive health practices as well as their complaints, limitations, and problems.<sup>15</sup>

The second stage of the nursing process is making the correct nursing diagnosis, which depends on accurate data collection and guides the planning, implementation, and evaluation stages.<sup>14,16</sup> The nursing diagnosis is defined as a clinical decision that involves an individual's, family's, or society's reactions to the present or potential health problems.<sup>17-19</sup> The nursing diagnosis is based on the synthesis of all data that was collected for guiding the nursing care process.<sup>20</sup> The nursing diagnosis consists of three parts that include an individual's problem, etiological factors,

and descriptive characteristics.<sup>18</sup> In order to increase the quality of nursing care and to provide that the needs of an individual is identified in the same way by all nurses, a standard terminology should be used in nursing diagnoses. Nowadays, the most common international nursing diagnosis terminology is developed by NANDA (North American Nursing Diagnosis Association).<sup>21,22</sup> In the literature, it has been reported that the NANDA nursing diagnoses are useful and valid,<sup>23</sup> that the NANDA is important for providing a common language in nursing, and that it would increase the quality of nursing records, nursing interventions, and patient outcomes.<sup>24</sup> Nevertheless, it has been underlined that the use of nursing diagnoses and documentation is insufficient in systematic research and health care.<sup>25</sup>

In health care services, high quality patient care depends on the comprehensive care plan developed by nurses.<sup>5</sup> In Turkey, use of the nursing process recently became more prevalent due to legal regulations and the increase in quality research.<sup>19</sup> These circumstances increase the importance of school education which provides the opportunity for teaching the nursing process and for using care plans. In order to increase the use of the nursing process, the nursing process should be taught in an effective way during school education.<sup>26</sup> In this context, the nursing process is included in the curriculum of schools that provide Bachelor's degree nursing education.

Evidence shows that education programs are significantly effective in increasing the accuracy of the nursing process and its use.<sup>12</sup> However, it has been concluded that students have difficulties in performing different stages or all stages of the nursing process during clinical practice.<sup>9</sup> In nursing education, students believing that the use of the nursing process is a necessity and providing nursing care in accordance to the process would facilitate using the nursing process in clinical practice after

graduation.<sup>16,22</sup> In this context, it is important to determine the opinions of nursing students regarding the use of the nursing process and their levels of proficiency.

In the literature, studies examining the nursing process used by nursing students for delivering care for patients are available.

In most of these studies, the proficiency of students in being able to identify the nursing diagnosis was investigated.<sup>7,11,16,19</sup> In a few studies, the opinions of students regarding the use of the nursing process and their proficiency were determined.<sup>9,27</sup>

Therefore the aim of this study was to determine the opinions of nursing students regarding the use of the nursing process, their level of proficiency in data collection according to Gordon's Functional Health Patterns Model, their ability of identifying nursing diagnoses according to data, and to evaluate the proficiency of the nursing process they generate in regard to these diagnoses.

The study is important in means of determining the opinions of students regarding the nursing process, their competencies and shortcomings in the application of the nursing process stages, and in turn, making the necessary regulations in curriculums and supporting the education of students pertaining to the nursing process. In addition, the study would contribute to the determination of statistical data that show the levels of proficiency in the nursing process among nursing students who study at undergraduate nursing programs in Turkey.

## Materials and methods

The sample of this descriptive study consisted of second year students who studied during the fall semester of 2014-2015, who passed the Fundamentals of Nursing course successfully, and who completed the theoretical part of the

Internal Diseases Nursing course. In our study, a specific sample group was not selected and all 44 students were included in our sample.

The initial education on Gordon's Functional Health Patterns Model and the NANDA diagnoses was provided for students by the researchers within the first year course "Fundamentals of Nursing" and lasted for 8 hours. During the second year, at the end of the course "Internal Diseases Nursing", detailed education and case studies were provided on the model and the NANDA diagnoses. After the theoretical education, the students performed practice at the internal diseases clinic between 04 November and 27 December, 2014. Data was collected by examining 176 care plans prepared by the students.

The data collection form was developed by the researchers after investigating national and international literature and consisted of three parts.<sup>9,15,28</sup> The first part included 9 questions regarding believing in the necessity of the nursing process and the status of having difficulty in identifying the nursing diagnosis and in data collection among students. In the second part, students' competency in data collection, determining nursing diagnosis, planning, implementation, and evaluation stages was investigated. Gordon's functional health patterns model was used in the data collection (assessment) stage. In addition, the model is included in the curriculum as a form used for providing patient care in clinical practice during the course of internal diseases nursing. In the assessment stage of the nursing process, 135 questions related to the 11 areas in the Functional Health Patterns Model and 23 questions related to physical examination findings were included. In the diagnosis stage of the nursing process, levels of competency regarding descriptive characteristics, etiological factors, and outcome criteria were evaluated. In the third part, the

classification of NANDA diagnoses according to the areas in the Functional Health Patterns Model was evaluated.

Content validity was used for ensuring the validity of the instruments, in which the opinions of five academics were obtained with regards to content validity. The validity and comprehensibility of the instruments was tested in a pilot study with a sample group of 20 students. During the pilot study, content validity of the form was investigated, and similar questions were excluded. In addition, the instruments was administered to the students three weeks later, and the test-retest reliability of the measure was checked (Cronbach's alpha 0.82). All ambiguities were corrected before the administration of the instruments to the final sample. The evaluation of their results indicated no problems in terms of the clarity and the implementation of the form.

After beginning clinical practice, the researchers provided training and counseling on collecting data and completing care plans for each student in the clinical setting. Data was obtained in two stages. In the first stage, the opinion of students regarding the process was obtained using the questionnaire method.

In the second stage, data was collected by examining the care plans prepared by the students. The students prepared care plans for the individuals they provided care for during clinical practice. The care plans were taken from the students after the practice for evaluation. The researcher evaluated each stage of the nursing process in the care plans according to the following criteria.

- Data collection stage: Demonstrating the present or the possible condition of the individual.

- Nursing diagnosis stage: descriptive characteristics being specific to the relevant NANDA diagnosis and the individual, reporting etiological factors in accordance with the nursing and medical diagnosis, the outcome criteria being related to etiological factors and the nursing diagnosis.

- Planning and implementation stage: being aimed at patient outcomes.

- Evaluation stage: being related to outcome criteria.

Data pertaining to all stages of the nursing process prepared by the students was grouped as "competent", "partially competent", and "incompetent". The NANDA nursing diagnosis determined by the students was classified according to the dimensions of the Functional Health Patterns Model. The evaluation was conducted by the researcher who provided training on the topic for the students.

Data was evaluated via the Statistical Package for Social Sciences (SPSS) ver. 13.0 software and the Excel program using frequency distributions, percentiles, and means.

Prior to the study, the study was explained to the Graduate School Directorate and permission to carry out the study was obtained. After assigning grades for the Internal Diseases Nursing course practice, the aim and content of the study was explained to the students. Considering the principle of volunteerism, informed consent form was obtained from all participants.

## Results

Mean (SD) of the individuals who received care from the students was 62.20 (14.81) (min=18, max=87). It was found that 52.8% were female and 73.9% had more than one chronic condition.

Among the students, 65.9% believed in the necessity of using the nursing process in patient care, while one thirds (34.1%) believed that using the nursing process was not necessary. Students had the most difficulty in the data collection (22.7%) and diagnosing stages (29.6%) of the nursing process, whereas they had the least difficulty in the planning stage (13.6%) (Table 1). Students reported that patients not giving the appropriate answers (38.6%), finding it difficult or embarrassing to ask



patients the relevant questions (36.4%) during data collection, and the lack of theoretical knowledge (56.8%) during the diagnosing stage was the reasons for having difficulty.

According to the Gordon's Functional Health Patterns Model, we found that students were most proficient in "nutrition and metabolic condition" (77.8%), "elimination" (72.2%), and "cognitive and perceptual" (70.5%), whereas they were least proficient in "sexuality and reproductive" (60.2%), "values and beliefs" (34.7%), and "role and relationship functions" (31.2%). When we examined the care plans pertaining to the NANDA diagnoses, we found that 50.9% of the students explained descriptive characteristics, 54.2% explained etiological factors, 53.6% explained outcome criteria, 58.3% explained the planning stage, 41.3% explained the implementation stage, and 43.6% explained the assessment stage at sufficient levels (Table 2).

It was found that the students determined 54 different diagnoses in 176 care plans and a total of 1252 nursing diagnoses and that they applied 897 of these diagnoses. The most prevalent diagnoses determined by the students were "contamination risk" (10%), "pain" (10%), and "disturbed sleep patterns" (6.8%). It was found that the students did not make any diagnoses pertaining to "values and beliefs" and "sexuality and reproductive" (Table 3).

## Discussion

The nursing process, which provides a professional problem solving approach, creativity and critical thinking skills, and a humanistic approach, is accepted to be a method for explaining science based nursing interventions.<sup>8</sup> During nursing education, students comprehending the importance of the nursing process are among the responsibilities of instructors. More than half of the students think that it

is necessary to use the nursing process for performing patient care in clinics. Studies examining this topic yielded results supporting our findings.<sup>8,22,27,29</sup> Although our finding is positive, it was determined that more than one thirds of the students did not believe in the necessity of the nursing process. This finding is important and should be considered by nurse instructors.

Teaching the nursing process to the students in an efficient way is very important in means of nursing applications.<sup>30</sup> The majority of students reported that they did not have difficulties in all stages of the nursing process. This finding is important and positive as it indicates that the nursing process was taught in an efficient way during the training. Nevertheless, the students reported that they had the most difficulty in the data collection and diagnosing stages and the least difficulty in the planning stage. Some studies in the literature have yielded similar results.<sup>22,29,31</sup> In addition, in our study, the students stated that patients not giving appropriate answers to the questions during data collection, having difficulty in asking relevant questions to the patient or embarrassment, and lack of knowledge during the diagnosing process were among the reasons of having difficulties regarding the nursing process.

Data collection requires efficient questioning skills, whereas the diagnosis stage requires knowledge and critical thinking skills. This finding can be explained by the lack of knowledge and experience in students due to studying in the second year and by the fact that the students could not use critical thinking skills in patient care at sufficient levels. On the contrary, in one study, first year students were asked to determine nursing diagnoses via case studies and it was found that the students were successful in determining most of the nursing diagnoses.<sup>20</sup> In this context, the use of case

studies and similar teaching methods, which contribute to the development of critical thinking skills, would facilitate the learning and formation of the nursing process.

Systematic data collection regarding the

nursing process contributes to performing safe care as it facilitates solving the problems of an individual.<sup>32</sup>

In the study, it was determined that the students were competent regarding the areas of nutrition and metabolic state,

**Table 1.** The opinions of students regarding the use of the nursing process and their status of encountering difficulties (n=44)

Opinions and difficulties	N (%)
<b>Opinions of the use of the nursing process*</b>	
Necessary	29
Not necessary	14
<b>Difficulties in the nursing process</b>	
Data collection	10
Determining nursing diagnosis	13
Planning	6
Implementation	8
Evaluation	7

\*Miss=1

**Table 2.** The level of competency regarding the stages of the nursing process among students

Stages of the Nursing Process	Proficient N* (%)	Partially proficient N* (%)	Not proficient N* (%)
<b>Data collection according to Gordon's functional health patterns model</b>			
1.Health perception-management	98 (55.7)	59 (33.5)	19 (10.8)
2.Nutritional-metabolic pattern	137 (77.08)	32 (18.2)	7 (4.0)
3.Elimination	127 (72.2)	38 (21.6)	11 (6.2)
4.Activity-exercise pattern	55 (31.2)	96 (54.5)	25 (14.2)
5.Sleep-rest pattern	106 (60.2)	53 (30.1)	17(9.7)
6.Cognitive-perceptual pattern	124 (70.5)	37 (21.0)	15(8.5)
7.Self sensing-self-concept pattern	100 (56.8)	60 (34.1)	16 (9.1)
8.Role- relationship pattern	58 (33.0)	63 (35.8)	55 (31.2)
9.Sexuality-reproductive pattern	27 (15.3)	43 (24.4)	106 (60.2)
10.Coping-stress tolerance pattern	50 (28.4)	92 (52.3)	34 (19.3)
11.Value-belief pattern	31 (17.6)	84 (47.7)	61 (34.7)
<b>Nursing diagnosis</b>			
1. The defining feature	456 (50.9)	211 (23.5)	230 (25.6)
2. Etiologic factors	486 (54.2)	238 (26.5)	173 (19.3)
3. Sort results	481 (53.6)	159 (17.7)	257 (28.7)
<b>Planning</b>	523 (58.3)	314 (35.0)	60 (6.7)
<b>Implementation</b>	371 (41.3)	414 (46.2)	112 (12.5)
<b>Evaluation</b>	391 (43.6)	205 (22.8)	301 (33.6)

\*N=176 in the data collection stage, whereas n=897 in the nursing diagnoses, planning, implementation, and evaluation stages.

**Table 3.** NANDA diagnoses determined by the students according to Gordon's functional health patterns model

NANDA diagnosis according to Gordon's functional health	N (%)
<b>Health perception- management</b>	
Risk for contamination	90 (10.0)
Risk for falls	18 (2.0)
Risk for bleeding	15 (1.7)
Contamination	9 (1.0)
<b>Nutritional- metabolic pattern</b>	
Imbalanced nutrition –less than body requirements	57 (6.4)
Excess fluid volume	32 (3.6)
Nausea	32 (3.6)
Impaired skin integrity	28 (3.1)
Impaired oral mucous membrane	21(2.3)
Risk for impaired skin integrity	18 (2.0)
Hyperthermia	13 (1.4)
Deficient fluid volume	10 (1.1)
Risk for impaired oral mucous membrane	9 (1.0)
Interrupted breastfeeding	8 (0.9)
Risk for imbalanced fluid volume	6 (0.7)
Unstable blood glucose	6 (0.7)
Imbalanced nutrition- more than body requirements	4 (0.4)
<b>Elimination</b>	
Constipation	34 (3.8)
Diarrheal	11 (1.2)
Risk for constipation	9 (1.0)
Functional urinary incontinence	6 (0.7)
<b>Activity- exercise pattern</b>	
Activity intolerance	60 (6.7)
Fatigue	26 (2.9)
Total self care deficit	17 (1.9)
Ineffective breathing pattern	17 (1.9)
Ineffective airway clearance	17 (1.9)
<b>Sleep- rest pattern</b>	
Disturbed sleep patterns	61 (6.8)
<b>Cognitive- perceptual pattern</b>	
Pain	90 (10.0)
Deficient knowledge	27 (3.0)
Acute confusion	6 (0.7)
<b>Self sensing, self concept pattern</b>	
Anxiety	60 (6.7)
Disturbed body image	16 (1.8)
Powerlessness	14 (1.6)
Fear	4 (0.4)
<b>Role- relationship pattern</b>	
Social isolation	8 (0.9)
<b>Sexuality- reproductive pattern*</b>	
Coping- stress tolerance pattern	
Ineffective coping	8 (0.9)
Value- belief pattern *	
<b>Other diagnoses**</b>	32 (3.6)
<b>Total</b>	897 (100)

\* No diagnoses were made in the area of sexuality-reproduction and values-beliefs. \*\*Less than 3 diagnoses which were determined by the nursing student. These include risk for trauma, risk for vascular trauma, ineffective health management, risk for aspiration, risk for unstable blood glucose, ineffective tissue perfusion, impaired spontaneous ventilation, impaired cardiac output, impaired walking, sedentary lifestyle, self neglect, impaired comfort, impaired memory, risk for loneliness, hopelessness, impaired verbal communication, interrupted family processes, and risk for suicide.

elimination, cognitive and perceptual pattern and were not competent regarding the areas of sexuality and reproduction, values and beliefs, role and relationship students collected most data on health perceptions, nutrition and metabolism, cognitive and perception patterns; whereas they collected least data on values and beliefs, safety and protection, coping and sexuality.<sup>9</sup> Similarly, in one study on nurses, it was found that the participants were incompetent in collecting data on sexuality and reproductive functions.<sup>14</sup> In the study, not being able to collect sufficient data on sexuality and reproduction, values and beliefs, role and relationship functions can be explained by the fact that these areas involve privacy and abstract concepts and that the students' levels of cognitive competency were not satisfactory.

The study showed that half of the students were competent in the explaining descriptive characteristics, etiological factors, outcome criteria, and the planning stage in the care plans pertaining to the determined diagnoses; whereas more than half of the students were not competent in explaining the implementation and evaluation stage. There are some studies that support our findings. In a study, Gok Ozer and Kuzu found that students' rates of determining nursing diagnoses, descriptive characteristics, related factors, outcome criteria, planning, implementation, and evaluation were at moderate levels.<sup>9</sup> In another study conducted on fourth year students, the result showed that the students were able to perform a sufficient number of interventions according to nursing diagnoses and able to perform almost all of the interventions they planned and that not being able to apply interventions was due to patient and clinic related problems.<sup>30</sup> In our study, the students were found to be less competent in the implementation and evaluation stages compared to other stages, which may be explained by the fact that they may experience shortcomings regarding

transferring the theoretical knowledge they learned into practice since they are in second grade. Contrary to our findings, in one study, it was determined that the rates of determining nursing diagnoses, outcome criteria, planning, implementation, and evaluation in the care plans prepared by students were low;<sup>7</sup> whereas in another study, Karadakovan and Yeşilbalkan reported that students were incompetent in choosing interventions regarding nursing diagnoses.<sup>16</sup>

For nurses, using nursing diagnoses constitute a basis for the provision of appropriate nursing care.<sup>18</sup> An accurate nursing diagnosis facilitates solving the patient's problems and enables the provision of systematic care.<sup>17</sup> The most prevalently determined diagnoses by the students that participated in the study were contamination risk, pain, and disturbed sleep patterns. Since the least data was collected on the areas of values and beliefs and sexuality and reproduction, students did not make any diagnoses regarding these areas. This finding is in line with the literature.<sup>7,9,16,19,31</sup>

The diagnosis of contamination risk was frequently used by the students. This finding can be explained by the fact that the majority of patients had intravenous and urinary catheters that the incidence of nosocomial contaminations is high in hospitals, and that contamination risk is a presentable diagnosis. When we examined the study results, we saw that the nursing diagnoses used by the students were mostly related to physiological needs.

Other areas which could not be diagnosed involved patient privacy and abstract concepts. Due to the fact that the students were in second grade and that they have shortcomings in knowledge and experience regarding these areas, it may have been difficult for the students to acknowledge the psychological, social, intellectual, and spiritual needs of individuals. This finding is important in means of providing supportive education



and application settings that would enable students to gain knowledge and experience for conducting a holistic evaluation and in means of following up students during consecutive years of education in order to overcome these shortcomings.

## Conclusion

The nursing process has many benefits for the individual who is receiving care, the nurse, and the nursing student. An accurate nursing process facilitates solving the patient's problems and enables the provision of systematic care for patients.

During nursing education, students comprehending the importance of the nursing process are among the responsibilities of instructors. In this study, 176 care plans prepared by 44 students were examined. More than half of the students think that using the nursing process is necessary for providing patient care in clinics. According to Gordon's Functional Health Patterns Model, it was determined that the students were most proficient in collecting data on nutrition and metabolic condition, elimination, and cognitive and perceptual, whereas they were least proficient in collecting data on sexuality and reproductive, values and beliefs, and role and relationship functions. It was found that half of the students were competent in nursing diagnosis and planning stages but more than half of the students were incompetent in data collection, implementation, and evaluation stages.

In the light of the study results, use of the nursing process in care should be taught to students beginning from first grade in order to promote their beliefs in the necessity of the nursing process. For increasing the efficacy and competency of the nursing process, prior to clinical application, it is recommended to perform the nursing process via case studies pertaining to the nursing process and nursing diagnoses. In the areas of sexuality and reproduction and

values and beliefs, where students were incompetent in data collection and determining nursing diagnoses, data collection techniques can be supported and students' level of competency can be evaluated in consecutive years of education.

Moreover, instructors should provide case discussions during clinical practice and guide students in preparing the process of nursing care. In all stages of the nursing process, practical and up-to-date knowledge that is appropriate for the clinical environment can be taught to students and the opportunity to apply the nursing process in different patient groups via clinical rotation can be provided in order to increase students' level of competency. In addition, it is recommended to conduct studies with large sample groups in other universities in order to compare students' levels of competency.

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## Ethical issues

None to be declared.

## Conflict of interest

The authors have disclosed no potential conflicts of interest, financial or otherwise.

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