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The Effect of Group Case Studies on NANDA-I Nursing Diagnosis Identification and Perception of Nursing Students

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ABSTRACT

Objective: The study aimed to identify the effect of group case studies on the accuracy of nursing diagnoses made by student nurses and their perception of NANDA International nursing diagnoses.

Methods: The study was conducted as an interventional and descriptive research with a sample that comprised 164 nursing students studying at the Department of Nursing of a university. Study data were collected using Descriptive Characteristics Form, Perception of Nursing Diagnoses Scale, Students' Opinion about Nursing Diagnoses Form, and Care Plan Assessment Form. A researcher offered four hours of theoretical training about the nursing process and NANDA International nursing diagnoses, after which the students filled out the Descriptive Characteristics Form and the Perception of Nursing Diagnoses Scale. Thereafter, the students were randomly divided into five groups, and each group performed two case studies with a researcher every week. After the completion of the case studies, the students were asked to fill out the forms again. The data were analyzed using the number, percentage, mean, standard deviation values, and Wilcoxon test.

Results: The results emerging from the case studies indicate that the majority (89.6%) of the students were able to make accurate diagnoses in compliance with the criteria set in NANDA International. The total score of the students in the perception of nursing diagnoses was not statistically significant ($p > 0.05$). Statistically significant differences were found, on the other hand, in the negative, and positive way in the subscales of 'clear representation of the patient situation' and that of 'the ease of use', respectively ($p < 0.05$).

Conclusion: Almost all the students were able to define the accurate diagnoses complying with the criteria set in NANDA International, and while this did not affect the students' perception of nursing diagnoses, the subscale of 'the ease of use' had a positive effect in this respect.

Keywords: Group study, nursing diagnosis, nursing students, group study.

1. INTRODUCTION

The nursing process which brings a professional identity to the nursing profession contributes to distinguishing nursing care and measuring the quality of care (1,2). Nursing diagnoses that are considered to be the most important component of nursing care process are based on a synthesis of all data collected from patients covering the patient's problems, risk conditions, preservation, and improvement of health (3-5). Besides, nursing diagnoses define conditions that might be treated by nurses, help to identify the scope of nursing practice and create, in return, a consistent and universally readable terminology among nurses (6).

Nursing diagnoses are an essential part of the nursing process which contributes to developing nursing knowledge and practice (7-9). Negative or positive perceptions of nursing diagnoses by nurses do influence the use and implementation of diagnoses (8). While a positive perception of nursing diagnoses improves the quality of patient care (6,10), a negative perception would affect the use of the common diagnostic terminology and the methods universally accepted in planning patient care (5,7,8). Today, instructors in undergraduate nursing education focus on implementing various training methods to improve students' active learning and critical thinking skills concerning the nursing process and nursing diagnoses (11-13). In case-based education, which is one of these methods, students are allowed to efficiently and actively learn by combining critical thinking skills, nursing knowledge, and practice based on scenario/patient-based cases they plot themselves (13,14). Although case-based teaching is actively used in education, it alone does not suffice to provide target-oriented information and fails to yield desired and expected results concerning efficiency (15). In addition to these learning methods, in group learning, which is a student-centered

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teaching method frequently preferred in higher education, group members are allowed to actively participate in the learning-teaching process by cooperating among themselves rather than memorizing and studying the information, and they structure knowledge by themselves by creating an association with their own experiences and knowledge (16). In this process, students create group interactions and communication among the individuals in the group, thereby creating an environment where they can develop information and exchange views (16,17). Therefore, students easily express their opinions, recognize different perspectives, and create common wisdom with other students (18). In this respect, group learning creates an efficient learning environment, thus contributing to students' active participation in the classroom setting and increasing their success.

In nursing education, commitment, understanding, and competency perception should be vested in nursing students, particularly to identify nursing diagnoses. Educational programs designed to teach nursing diagnoses should accordingly include efficient teaching methods that can create and reinforce a positive perception of diagnoses. Developing such a perception during their studies will enable students to acquire and adopt the habit of using nursing diagnoses after graduation. Previous research reports that nursing students could identify the proper nursing diagnoses from NANDA-International (I) taxonomy list, but that their level of skills to correctly name the diagnoses according to the relevant terminology was not satisfactory (19). Past research also reported that nursing students had a correct perception and held positive attitudes of the rules set in NANDA-I (20). Reviewing the current literature, we see that several studies are available that addressed the care plans designed by nursing students in our country (1,19,21-25). Besides, while there has been only one study that aimed to identify the nursing diagnoses and interventions of student nurses in case scenarios developed for probable patients with traumas using 'Scenario-based Case Definition Form' (15), no study is available that has investigated the effects of group case studies on the students' perception of nursing diagnoses. The results of this study are believed to offer statistical data concerning the knowledge level and perception of students who recently started and continue with the nursing undergraduate education as well as how the group case study (GCS) affects this perception and contribute to developing training programs. A clear understanding of the knowledge level and perception of students pursuing a graduate degree in nursing concerning nursing diagnoses and determining the effect of GCSs on such perception is of great importance concerning a realistic and purposeful designing of curricula intended for nursing education and training. In this context, the present study aimed at identifying the effect of GCSs on the accuracy of nursing diagnoses made by student nurses and their perception of nursing diagnoses.

2. METHODS

The study was conducted between March and May 2016 as an interventional and descriptive research.

2.1 Participants

The population of the study consisted of 180 students who enrolled in the course 'Fundamentals of Nursing-II' in the 2015-2016 academic year at the Department of Nursing, Faculty of Health Sciences, University, Turkey. The sample of the study comprised 164 of the students in the sample population who agreed to participate in the study and were included in the sample criteria. We reached 91% of the students in the study.

The criteria for being included in the study are enrolling in the course 'Fundamentals of Nursing-II' for the first time and voluntary taking part in the study. The criteria for exclusion from the study are having been trained in nursing before, not voluntary taking part in the study, and not attending group studies.

2.2 Data Collection and Instruments

Data was collected with the Descriptive Characteristics Form, Students' Opinion About Nursing Diagnoses Form, Care Plan Assessment Form, and Perception of Nursing Diagnoses Scale prepared by the researchers based on the literature (5,8,26,27).

2.2.1 Descriptive Characteristics Form (DCF)

In the form, there are four questions in total: 'students' gender, graduated school, the reason for preferring the profession, and if they heard of NANDA-I nursing diagnoses before'.

2.2.2 Students' Opinion About Nursing Diagnoses Form (SOANDF)

In the form, there are six questions in total, namely, the students' ability to identify the diagnosis and to make an accurate diagnosis, the necessity of identifying nursing diagnosis, whether making a diagnosis is useful, the hardest part while preparing the nursing care plan, and their opinions about the care plan (7,15,28).

2.2.3 Care Plan Assessment Form (CPAF)

In the form, there are eight sections which are comprised of yes/no questions to evaluate the students' competency in collecting data, recognizing the accurate diagnosis, prioritizing diagnoses, identifying symptoms and etiology, planning, identifying nursing interventions and evaluating care results. These sections were evaluated by the researcher in charge of every group.

2.2.4 Perception of Nursing Diagnoses Scale (PNDS)

In the form, there are 26 items which were filled out by the students. The scale was developed by Olsen, Frost, and Orth (29) and Turkish validity and reliability was verified by Akin-Korhan et al. (9). The Cronbach's alpha value of the scale is 0.82. The scale is a five-point Likert type and is made up of 26 items. The scale has subscales of definition and introduction

of the nursing profession (13 items), clearly defining the patient's condition (5 items), ease of use (4 items), and conceptual direction (4 items). The total score varies between one and five. Lower total scores in the scale point to a positive perception of nursing diagnoses. In this study, the Cronbach's alpha value was 0.74.

2.3 Intervention and Data Collection

A researcher offered four hours of theoretical training about the nursing process and NANDA-I nursing diagnoses (NANDA International Nursing Diagnoses Definitions and Classifications 2015-2017) in the Fundamentals of Nursing-II course. The researcher presented the theoretical training and first case study by use of PowerPoint, explanation, and questions and she discussed the case with questions and answers. After the first case study, the students who volunteered filled out the DCF, SOANDF, and PNDS. Then the students in five different groups in total were divided into groups randomly by drawing lots by the researcher with 33 students in four groups and 32 students in one group. Each week, every group was given a sample of two cases created as realistic as possible by the researchers. Expert opinion was taken for each case before they were handled to the students and were put in order by researchers according to expert opinion. The sample cases included elements of nursing history, patient explanations, physical examination, and medical treatment. The same cases were given to every group. A week duration was respited to the students for preparation. The cases were prepared according to Gordon's Functional Health Patterns Model and NANDA-I. The researchers worked simultaneously with their groups every week, in a total of five weeks and 10 case studies. The students presented their care plans in PowerPoint to their peers in the group and the researcher. The case was discussed with questions and answers at the end of the presentation. After the last case study, the students filled out the SOANDF and PNDS again. After completion of the case studies, the students obtained data from patients individually and created a care plan in duration clinical practice. Care plans were evaluated in charge of the group and were recorded in the CPAF by the researchers (Fig 1).

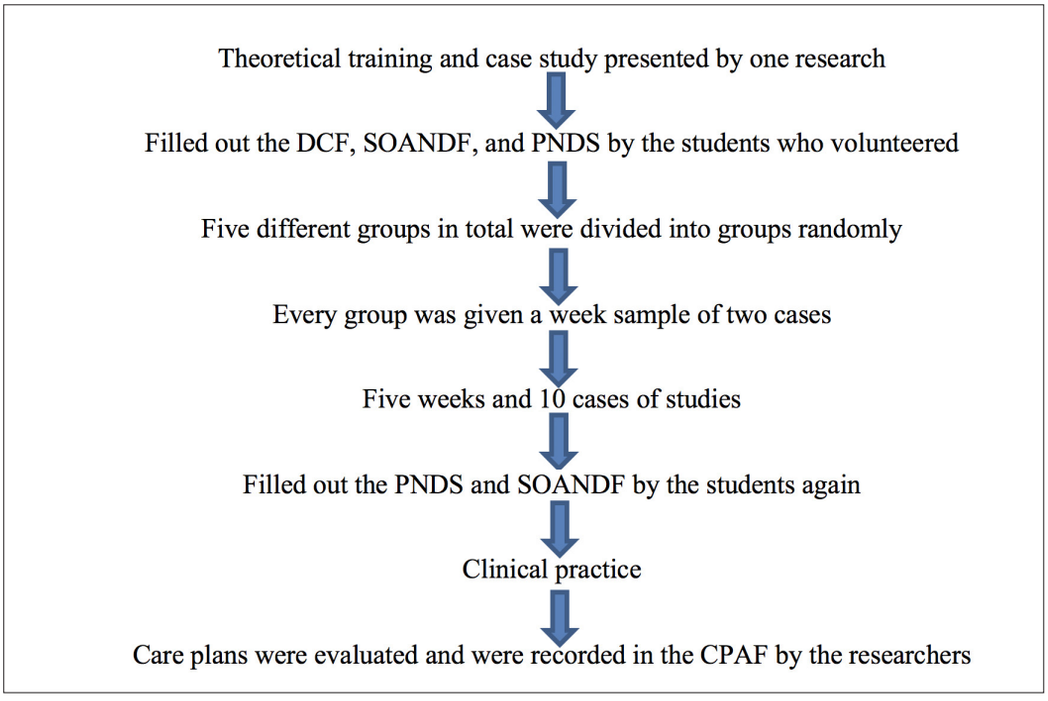

Figure 1. Flow Chart of Research

2.4 Ethical Consideration

Written permission was obtained from Karadeniz Technical University, Faculty of Health Sciences (decision no.:63582098/200, dated 11.03.2016) to carry out the study. The students who were included in the study were informed about the study, and their verbal permissions were obtained. Consent was obtained from Korhan et al. who verified Turkish validity and reliability of the scale, the organization where the study took place, and the students who took part in the study.

2.5 Data Analysis

The data obtained from the study were analyzed using SPSS (Statistical Package for Social Sciences) for Windows version 22.0. Number, percentage, mean, and standard deviation values were used as descriptive statistical methods in the evaluation of the data. The Wilcoxon test was used for the matched groups to determine the differences between the first and last scores. The findings were evaluated in 95% confidence interval and on $p < 0.05$ significance level.

3. RESULTS

The mean (standard deviation [SD]) age of the students participating in the study was 18.83±0.96years, and 78% of the students were female, mean±SD academic degree is 3.09±1.32 (over 4), 77.4% are graduates of Science, and Anatolian High School. 61.2% of the students preferred nursing for easy employment, 82.3% reported they never heard of nursing diagnosis.

Students' opinions about NANDA-I nursing diagnoses and care plans of the students before and after GCS. It was found that 70.9% of the students before GCS could determine their NANDA-I diagnoses and 92.7% could diagnose according to the data, 91.5% could determine the diagnosis after the GCS and 90.9% could make the diagnosis according to the data. Make a diagnosis of nursing was stated that 90.6% of students were necessary before GCS and 96.3% stated that the care plan was beneficial. After GCS, 87.8% of the students stated that it is necessary to make a diagnosis of nursing and 89% of them stated that the nursing care plan is beneficial. Before GCS, it has been identified that 35.9% of the students had difficulty in finding a diagnosis name and 29.9% of them had difficulty writing PES (Problem, Etiology, Symptom), and after GCS, only 2.5% of the students had a diagnosis name, and 47.9% had difficulty writing the PES section of the care plan (Table 1).

Table 1. *Students' Opinions about NANDA-I Diagnoses and Care Plan (n=164)*

Students' opinions	Before GCS		After GCS	
	n	%	n	%
Determined the nursing diagnosis				
Yes	117	70.9	150	91.5
No	47	28.7	14	8.5
Made an accurate diagnosis based on the data				
Yes	152	92.7	158	96.3
No	12	7.3	6	3.7
Is diagnosis necessary?				
Yes	149	90.9	144	87.8
No	15	9.1	20	12.2
Is the nursing care plan useful?				
Yes	158	96.3	146	89.0
No	6	3.7	18	11.0
Problems in identifying nursing diagnoses				
Categorization	31	18.9	29	17.8
Name of diagnosis	26	35.9	4	2.5
PES	49	29.9	78	47.9
Order of priority	30	18.3	26	16.0
Not challenged	8	4.9	21	12.9
The entire stage is challenging	20	12.2	5	3.1
Opinions about the care plan				
Offers accurate, planned care	148	90.2	147	89.6
Offers well being	109	66.5	99	60.4
Waste of time	5	3.0	10	6.1
Not necessary for the nurse	10	6.1	5	3.0
Offers a holistic approach	94	57.3	122	74.4
Offers patient specific, quality and qualified care	115	70.1	121	73.8
Not useful in practice	8	4.9	3	1.8

GCS: group case study, PES: problem, etiology, symptom

PNDS total scale score was 2.39±0.39 before GCS, it was 2.34±0.35 after GCS, but there was no statistically significant difference between the scores. However, there was a statistically significant difference between the scores before and after GCS in the subscale of F2 and F3. It was determined that F1 (definition and introduction of the nursing profession) sub-dimension score of the scale was 2.02 ± 0.53 before GCS, then 1.93 ± 0.57 and there was no statistically significant difference between the scores (p=0.097). F2 (clearly defining the patient's status) sub-dimension score of the scale was 2.85 ± 0.53 before GCS, then 2.99 ± 0.53 and there was a statistically significant difference between the scores (p=0.011). F3 (ease of use) subscale score of the scale was 2.63 ± 0.54 before GCS, then 2.41 ± 0.54 and there was a statistically significant difference between the scores (p=0.000). No statistically significant difference was found in the F1 (definition of the nursing profession) and F4 (conceptual aspect) subscales of the scale (Table 2).

Table 2. *Comparisons of the Scores in the Students' Perception of Nursing Diagnoses Scale Before and After GCS (n=164)*

Scale subscale	Before GCS	After GCS	p*
	Mean ± SD	Mean ± SD	
F1**	2.02 ± 0.53	1.93 ± 0.57	0.097
F2***	2.85 ± 0.53	2.99 ± 0.53	**0.011**
F3****	2.63 ± 0.54	2.41 ± 0.54	**0.000**
F4*****	2.77 ± 0.54	2.79 ± 0.53	0.531
Total Score	2.39 ± 0.39	2.34 ± 0.35	0.281

*GCS: group case study, SD: standard deviation, *Wilcoxon test was made, **F1: Delineation and promotion of the nursing profession, ***F2: Clear representation of the patient situation, ****F3: Ease of use, *****F4: Conceptual orientation*

The results of the evaluation of the care plans prepared by the students after clinical practice are given in Table 3. When the care plans prepared by the students are evaluated by the researchers, 80.5% of the students are sufficient in collecting data, 89.6% of them can determine the correct nursing diagnosis, 50% of them are diagnosed following the order of priority, 79.9% of them are diagnosing the symptoms correctly. It has been determined that 77.4% can determine the etiology related to diagnosis, 73.8% can make nursing care planning correctly, 64.0% can correctly determine nursing interventions and 62.2% are sufficient to evaluate the care applied (Table 3).

The students identified 9 different nursing diagnoses in the care plan. The most frequently identified three nursing diagnoses were 'Risk for falls (00155)', 'Risk for infection (00004)' and 'Acute pain (00132)'. The students' planned interventions were suitable for the diagnosis of 'Risk for falls (62.2%)', 'Risk for infection (56.1%)', and 'Acute Pain (42.7%)' (Table 4).

Table 3. *Evaluation of the Results of Care Plans Prepared by the Students After Clinical Practice (n=164)*

Care Plan Assessment Criteria	n	%
Sufficient in data collection		
Yes	132	80.5
No	32	19.5
Identified the accurate diagnosis		
Yes	147	89.6
No	17	10.4
Determined the order of priority of diagnoses		
Yes	82	50.0
No	82	50.0
Accurately identified the symptom		
Yes	131	79.9
No	33	20.1
Accurately identified the etiology		
Yes	127	77.4
No	37	22.6
Made accurate planning		
Yes	121	73.8
No	43	26.2
Accurately identified nursing interventions		
Yes	105	64.0
No	59	36.0
Sufficient in evaluation		
Yes	102	62.2
No	62	37.8

Table 4. *The Most Frequently Identified Nursing Diagnoses in the Care Plan and Number of Students Who Planned Suitable Interventions for the Diagnosis (n=164)*

NANDA-I diagnoses	Identified nursing diagnosis	Nursing interventions planned for the diagnosis
	n (%)	n (%)
Risk for falls	123 (75.0)	102 (62.2)
Risk for infection	119 (72.6)	92 (56.1)
Acute pain	93 (56.7)	70 (42.7)
Risk of bleeding	76 (46.3)	51 (31.1)
Disturbed sleep pattern	73 (44.5)	59 (36.0)
Self-care deficit	63 (38.4)	49 (29.9)
Activity intolerance	51 (31.1)	34 (20.7)
Impaired skin integrity	49 (29.9)	39 (23.8)
Anxiety	41 (25.0)	34 (20.7)

4. DISCUSSION

The teaching of the nursing process starts with the principles of nursing in the first year and continues after graduation. As the students need to implement the nursing process in their entire education and professional life, the benefits of the process are discussed in the classes and its necessity is emphasized. In this study, before and after GCS, almost all of the students found nursing diagnoses necessary and preparing the care plan useful. In parallel to the results of our study, in the studies that were found that most of the student nurses found the nursing process necessary and almost half of them explained all steps in the process on the desired level (30,31). Although its significance and usefulness are acknowledged, students and nurses can also be seen as having troubles in the stages of the nursing process (27,30,31). In our study, almost all of the students were able to identify the diagnosis suitable for NANDA-I Taxonomy II, and the data after GCS. In parallel to the results of our study, Uysal et al. (2016) concluded in their study that 80.2% of the students accurately identified diagnoses according to NANDA-I taxonomy, and success was achieved using the nursing process scenario offered by using the problem-based learning method (32). In other studies in the field in the literature, it was determined that most of the students had troubles with identifying NANDA-I nursing diagnoses (30), they had the most problems with nursing diagnosis and data collection (31,33), the nurses made wrong diagnoses outside NANDA-I Taxonomy (2) and 'sometimes' had challenges in the diagnosis identification stage (27).

In our study, the number of students who thought nursing diagnoses were necessarily reduced after GCS. It might be an outcome of the students noticing they were challenged in some stages while creating the nursing process. The students reported having the most problems while identifying the nursing diagnosis suitable for NANDA-I and identifying PES format. Similar to our study result, Tambağ and Can (7) determined that the PES format of 71.5% of the students was not identified. On the other hand, Müller et al. (3) reported in their systematic review on the evaluation of nursing diagnoses that the nurses were the most inadequate in identifying symptom/finding and etiology. However, when the students' care plans were reviewed by the researchers in our study, they concluded most of the students were able to collect data and identify for nursing diagnosis. According to this result, it can be concluded that the case discussions held in groups proved to be effective. Case studies were the least effective while the students were prioritizing nursing diagnoses. The reason is suggested to be the lack of information about the disease as they were freshmen.

It is of essential importance that students provide individual care to patients they care for and make proper use of the nursing process so that the scientific identity of the nursing profession can be maintained, but it is of equal importance that they are aware of the benefits and necessity of nursing process in care. The study findings show, based on the results regards the benefits of care provided based on a nursing care plan, that almost all the students expressed that a care plan led to proper and systematic care, and more than half of them held the opinion that such plans made a holistic, patient-specific and quality care possible and thus contributed to the general well-being of patients. In the study performed by Seval and Çiftçi (34), when asked about the benefits of the nursing process, the students expressed that the use of nursing diagnoses was easy and informative and that it was supportive of professional autonomy, facilitating them to focus on nursing-specific fields and thus providing an improved professional image of nursing. Past

research also reports that classification systems used in the field of professional nursing provide reliable, systematic, and efficient interventions concerning knowledge organization, nursing care planning, and satisfaction of patients' needs (20,35,36). Research also suggests that a patient-centered approach is necessary for inpatient care (37). These findings of previous studies are inconsistent with those we observed in the present study.

One of the purposes of nursing education is to create a positive perception of students towards nursing diagnoses. Considering the definition of perception, it means paying attention to something, being aware of, understanding, and comprehending plain information obtained through the senses. In our study, although the perception of nursing diagnoses by the students before and after GCS was in the positive direction, the difference between them was not statistically significant. The fact that there was no difference in the scale score between and after GCS in our study might an outcome of the fact that the student had knowledge about the diagnosis but did not have clinical experience. Because students need to have clinical experience starting from meeting the patient or non-patient individual/family/group to understand and comprehend diagnoses (38). Therefore, after meeting the patient, obtaining and analyzing patient data, in other words, learning by experience, students can create a perception about diagnoses. Although the students in the study did not have clinical experience, their perception scores for nursing diagnoses increased after GCS. It can be explained by the outcome that the method had a positive impact on perception. In the study conducted by Rahman et al. (20) evaluating the university students' attitudes towards and perception of NANDA-I nursing diagnoses and the study conducted by Karaca and Aslan (26), the students who took training on nursing classification and diagnosis had a positive perception of nursing diagnoses compared to those who did not take the class. As in these studies, students having a positive perception about nursing diagnoses can facilitate identifying the patient's problems, positively affect the planning of patient care, and improve the quality of care (10). Although students have a positive perception of diagnoses in our study and others in the literature (20,26), the negative perception of the nurses towards nursing diagnoses in the study conducted on nurses by Olsen (29), Halverson (8) and Akin-Korhan et al. (9) is noteworthy. The difference in perception among the nurses might be a result of educational differences (39). Moreover, it demonstrates the students who had a positive perception of nursing diagnoses but changed to have negative perceptions after having started to work in the clinic and it is also important after graduation. Therefore, training professional nurses who have a high positive perception about nursing diagnosis and have adopted specificity as a guideline in care is important for care standardization.

Considering the subscales of scale in our study, the perception in the subscale of 'clear representation of patient situation' significantly diminishes after GCS. As students do not have clinical experience, they cannot understand the patient's findings and notice problems enough before the case and they can think that they can define the patient's condition. On the other hand, as the students discussed cases and noticed it was not easy to understand data from the patient to use the nursing diagnoses while identifying the patient's problems, their perception in this subscale might have diminished. Similar to the findings of the study, Halverson demonstrated as the reason for negative perception in this subscale that nurses were not able to comprehend the real definition and use of nursing diagnosis (8). In our study, the perception of the students in the 'ease of use' subscale significantly increases after GCS. It helped the students analyze the case and identify the accurate nursing diagnosis. Moreover, it shows GCS helped the students use the diagnoses. Similar to the results of this study, Ogunfowokan et al. (28) reported diagnoses were useful in practice and Karaca and Aslan (26) reported the perception was positive in 'the ease of use' based on the results emerging from the evaluations of the care plans schemed by the students after practical work subscale (26,28).

The study showed, in a clinic, that while the majority of the students were efficient in collecting data, could establish accurate diagnoses based on correct symptoms and etiology and classify the diagnoses by order of priority, more than 50% were able to define the nursing interventions based on a self-schemed plan and successfully perform what was necessary at the step of evaluation. These results show that nursing students were more successful at the nursing process steps of assessment and nursing diagnosis than the steps of planning, implementation, and evaluation. This success may be attributed to the fact that the steps of diagnosing and nursing diagnoses are based rather on theoretical knowledge, giving the students the possibility to draw on several written reference sources in a more efficient way in scheming their care plans. The study also demonstrated that the students were less successful in the steps of planning and implementing nursing care. Due to several reasons such as lack of theoretical knowledge and clinical experience as well as fear of making errors, these steps cannot be sufficiently understood by the students and are accepted, as a result, as difficult practices (40). The study suggests that students need more clinical experience in the steps of planning, implementation, and evaluation to define, implement and evaluate the interventions specific to an individual in a given case because these steps of the process require the students to properly evaluate the individual's problems and choose the right intervention to this end. Previous research also reports that the majority of students expressed having difficulty in these steps (1,2,41). The results of the present study are in agreement with those observed in past research. Besides, the findings of the study reveal that the students had higher success when compared with previous studies, which may be attributed to the positive effects of GCS on the learning process. Previous research reports that group learning, which is a student-centered learning method, is one that facilitates the cooperation (16), and knowledge and opinion sharing among students, thus creating an

environment marked with active learning (16,17). In this context, group learning may have contributed to the active participation of students in classroom activities by creating an effective learning environment, which, in turn, may have increased their success.

The study showed that the students most frequently used the following 9 nursing diagnosis in their care plans: 'risk for falls', 'rick for infection', 'acute pain', 'risk for bleeding', 'disturbed sleep pattern', 'self-care deficit', 'activity intolerance', 'impaired skin integrity' and 'anxiety'. These results regarding the diagnoses most frequently used by students are inconsistent with past research. In agreement with our findings, previous studies report the following diagnoses as the ones most frequently mentioned by students: 'Risk for infection' (1,19,22,25,32,42-44), 'Acute pain' (19,22,25,32, 2-45), 'Bleeding risk' (32), 'Disturbed sleep pattern' (1,22,25,42,43) 'Self-care deficit' (1,22,32,42,44), 'Activity intolerance' (19,22,25,32,43), 'Impaired skin integrity' (22,45) and 'Anxiety' (19,22,32,42-44). Other diagnoses reported in the literature are 'Imbalanced nutrition: less than body requirements' (19) and 'Constipation' (19,22,25,43,45), 'Risk for impaired skin integrity' (1,25), 'Impaired physical mobility' (1,43), 'Risk for physical trauma' (32,43), 'Ineffective airway clearance', 'Ineffective respiratory pattern' (44), 'Hyperthermia' (45), 'Deficient knowledge' (32,45). The results of our study reveal, in consistence with previous research, that the diagnoses defined by the students were the ones of concrete structure that rather concern physiological dimension, with the 'Risk for falls' being the diagnosis most frequently defined by the majority of the participating nursing students in this study. It is remarkable that in the abovementioned studies the 'Risk for falls' was the diagnosis that was not at all defined or in some less frequently defined (22,32) by the participating students. That the 'Risk for falls' ranked first as the most frequently defined diagnosis in our study unlike past research may be attributed either to the specific case handled in our study or to the effect of the activities/projects integrated into the relevant study programs.

Another result emerging from our study is that relatively fewer students could plan the proper interventions following the nursing diagnoses they had defined in their care plans. The fact that fewer students could plan proper interventions for each diagnosis concerning the diagnoses defined by them in the planning phase may be attributed to the ineffective use of time in clinical work by some students and lack of knowledge typical for first-year students. Similar to the results of our study, Sendir et al. (46) report that the students had difficulty in the step of defining nursing interventions in the planning stage. The study suggests that lack of motivation in students, their inability to collect data, the influence of the role models available to them, or insufficient inclusion of nursing interventions into schemes of clinical practical work were the factors that may have influenced their failure to define proper nursing interventions.

Limitations and Strengths of the Study

The study covers freshmen enrolled in the Faculty of Health Sciences, Department of Nursing. Group and case studies were conducted as the teaching method. Possibility to participate in group discussions within the scope of the study course of the nursing process based on the case studies constitutes the strength of the present study.

5. CONCLUSION

In the study, it was found out that the students cared about the nursing process practice and group studies and sample case discussions made a difference in the perception of the nursing process. Although the students reported they were the most challenged while making a nursing diagnosis and creating PES, in the care plans they prepared after the group study, most of them were able to identify the diagnosis and prepare PES. It was also determined that the students were able to define NANDA-I nursing diagnoses according to the case but they had shortcomings in determining the order of priority. As can be seen from the results of our study, long term studies with the students in groups and based on sample cases improved the students' perception of the nursing process and diminished the challenges they faced while preparing the care plan.

The student uses the nursing process, which is taught for the first time in the fundamentals of nursing class, throughout his/her educational and professional life. Therefore, it is important that using various techniques such as group and case studies to make nursing process education effective and permanent. It is recommended to study in groups and with sample cases in the nursing process education to develop the students' ability to use the nursing process to the desired extent and positively increase the level of perception of nursing diagnoses. It can be suggested to make group case studies with more sample cases in the educational environment and to frequently repeat them after graduation. Students to move together, have a team spirit, and gain experience. It can be suggested to implement group case studies in every class to the extent possible in nursing education to allow students to acquire skills for working in teams. Organizing competitions where students prepare their cases and discuss it in the group can allow them to refresh their knowledge about the process and their perception of diagnosis in a positive way.

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