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Araştırma

Evaluation of Care Plans Prepared in the Fundamentals of Nursing Course Clinical Practice According to International Nursing Classification Systems

Hemşirelik Esasları Dersi Klinik Uygulamasında Hazırlanan Bakım Planlarının Uluslararası Hemşirelik Sınıflandırma Sistemlerine Göre Değerlendirilmesi

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Özet:

Amaç: Hemşirelik sınıflandırma sistemleri, hemşirelik bakımını görünür kılmakta ve hemşireler arasında tutarlı ve evrensel bir dil sağlamaktadır. Bu çalışmanın amacı, öğrencilerin hemşirelik sürecini öğrendikleri ve bakım planı yapmayı deneyimledikleri ilk alan olan Hemşirelik Esasları dersinin klinik uygulamasında hazırladıkları bakım planlarındaki hemşirelik tanılarını Fonksiyonel Sağlık Örüntüleri Modeli'ne göre tanımlamak ve Hemşirelik Girişimleri Sınıflaması'na göre değerlendirmektir.

Yöntem: Tanımlayıcı tipteki bu çalışma retrospektif olarak yürütülmüştür. Araştırmanın örneklemini, bir üniversitenin hemşirelik bölümünde 2021-2022 eğitim-öğretim yılının bahar döneminde Hemşirelik Esasları dersi klinik uygulamasında oluşturulan 143 bakım planı oluşturmaktadır.

Bulgular: Öğrenciler toplam 42 farklı North American Nursing Diagnosis Association-I tanısı koymuş ve en sık konulan tanı enfeksiyon riski olmuştur (n=40). Tanıların hangi Fonksiyonel Sağlık Örüntüleri alanına ait olduğu değerlendirilmiş ve en sık (n=93) beslenme/metabolik örüntü tanılarının yer aldığı belirlenmiştir. Hemşirelik süreci adımlarına uygun hazırlanan 143 bakım planında toplam 375 hemşirelik girişimi belirlenmiş ve en sık uygulanan hemşirelik girişimi (n=30) ilaç yönetimi (2380) olmuştur.

Abstract:

Aim: Nursing classification systems make nursing care visible and provide a consistent and universal language among nurses. The study aims to evaluate nursing diagnoses in the Fundamentals of Nursing course clinical practice, which serves as the first area where they learn the nursing process and gain experience in care planning, utilizing the Functional Health Patterns Model, and to asses them according to the Nursing Interventions Classification.

Methods: This descriptive study was conducted retrospectively. The sample of the study consists of 143 care plans created during the clinical practice of the Fundamentals of Nursing course in the spring semester of the 2021-2022 academic year at a university's nursing department.

Results: The students made a total of 42 different North American Nursing Diagnosis Association-I, and the most common diagnosis was the risk for infection (n=40). Which Functional Health Patterns Model the diagnoses belonged to was evaluated, and it was determined that the most common (n=93) nutrition/metabolic pattern diagnoses were included. A total of 375 nursing interventions in 143 care plans were prepared following the nursing process steps initiative and the most frequently applied intervention (n=30) was medication management (2380).

Sonuç: Öğrenciler çoğunlukla fizyolojik değerlendirme süreçlerini kullanmışlardır. Hemşirelik bakım planlarında standart terminolojinin kullanılması bütüncül hasta bakımının sürdürülmesine katkı sağlayabilir.

Anahtar Kelimeler: Hemşirelik bakım planları; hemşirelik tanısı; standart hemşirelik terminolojisi.

Conclusion: Students used mostly physiological assessment processes. Using standard terminology in nursing care plans can contribute to maintaining holistic patient care.

Key Words: Nursing care plans; nursing diagnosis; standardized nursing terminology.

Introduction

The application of the nursing process in practical settings establishes a framework for autonomous nursing interventions, placing a spotlight on the healthcare of every individual patient.(1) A crucial element within the nursing process, nursing diagnosis is described as "a clinical decision made by an individual, family, group, or society regarding the human response to or tendency towards health conditions".[(2)] Nursing diagnoses serve as the foundation for selecting nursing interventions aimed at achieving outcomes within the legal scope of the nurse's responsibility. Moreover, accurate determination of nursing diagnoses ensures effective planning and implementation of nursing care.[(2)]

Nursing classification systems make nursing care visible and provide a consistent and universal language among nurses. The North American Nursing Diagnosis Association-I (NANDA-I), a trailblazer in the standardization of nursing diagnoses and among the most commonly utilized classification systems, encompasses 244 nursing diagnoses organized in 13 domains and 47 classes. NANDA-I nursing diagnoses are widely used and revised and strengthened all over the World.[(2)] The Nursing Interventions Classification (NIC), which was created using NANDA-I nursing diagnoses, is a nursing classification system developed in order to standardize the interventions performed by nurses. It is a comprehensive classification system that is widely used in all care settings and that systematically organizes the treatments performed by nurses.[(3)] Each NIC intervention includes a list of activities covering 7 domains, 30 classrooms, and 565 nursing interventions that allow nurses to choose the intervention that best fits each patient's needs.[(3,4)]

Different data-collection models are employed to facilitate through data collection across all stages of the nursing process. Gordon's Functional Health Patterns (FHP) Model, specially designed to standardize the structure of nursing diagnoses, serves a guiding framework for nurses when obtaining patients' histories and conducting physical examinations. The model includes 11 categories; health perception-health management pattern, nutritional-metabolic pattern, elimination pattern, activity–exercise pattern, sleep–rest pattern, cognitive-perceptual pattern, self-perception–self-concept pattern, role–relationship pattern, sexuality–reproductive pattern, coping–stress tolerance pattern, and value–belief pattern.[5]

Nursing students are taught the nursing process and classification systems starting in their first year of nursing school as part of the Fundamentals of Nursing course.[6] Nevertheless, it is recognized that a significant number of students encounter challenges in comprehending the theory and practical application of the nursing process, facing particular difficulties in formulating nursing diagnoses.[7] Previous studies indicate that nursing students struggle to implement the steps of the nursing process and are not proficient in identifying nursing diagnoses at the desired level.[8,9] Students often determine medical diagnoses instead of nursing diagnoses and cannot distinguish problems within the nursing domain. Additionally, the students have difficulty in preparing a holistic care plan for patients and often focus on diagnoses within the physiological domain.[8,10,11] As future nurses, it is critically important for nursing students to gain the ability to identify nursing diagnoses and prepare care plans under the guidance of international nursing classification systems in their initial clinical practice experiences. The use of nursing classification systems enhances evidence-based nursing care, empowering nurses to engage in critical thinking and make well-informed decisions throughout the nursing process. The outcomes of these practices contribute positively to healthcare results.[12] Consequently, there is a vital need to assess the care plans crafted by nursing students in the Fundamentals of Nursing course. This course serves as the cornerstone for all professional nursing courses, serving as the initial introduction to the nursing process for students.

Aim of the study

This study aims to examine the care plans developed by students during the clinical practice of the Fundamentals of Nursing course, with a specific focus on their alignment with international classification systems.

Material and Methods

Type of the Study

This study was conducted retrospectively and descriptively. Three research questions were formulated:

1. What are the nursing diagnoses that nursing students determine in their care plans in line with the 2021–2023 NANDA-I classification?
2. To which Functional Health Pattern do most of the diagnoses determined by nursing students belong?
3. Which Nursing Intervention Classifications do nursing students use according to the nursing diagnoses that are most frequently identified in their care plans?

Setting

The research was carried out within the nursing department of a university located in Ankara. The sample consisted of the care plans of 63 first-year students enrolled in the Fundamentals of Nursing course during the spring semester of the 2021–2022 academic year. The sample selection was non-random, and therefore, all care plans generated as part of the course practice were incorporated into the study.

Data Collection Tools

In clinical practice, students use the patient care data collection form and the care plan form to record patient information. In the data collection process of the study, the data from the care plan form of the students were transferred to the 'Student Care Plan Evaluation Form', developed by the researchers based on the literature.[8,10] This form facilitates the assessment and reporting of nursing diagnosis, FHP patterns, and NIC interventions featured in the care plans.[13,14]

Nursing diagnoses in the nursing care plans prepared by the students were aligned with the NANDA-I guide,[2] and nursing interventions were matched with the NIC guide.[15] Whether the nursing diagnoses were correct and to which FHP they belonged were evaluated. To compare the appropriate NIC recommendations for each nursing diagnosis and the interventions implemented by the students, “NOC and NIC Linkages to NANDA-I and Clinical Conditions” was used as a guide.[16]

Data Collection

Within the scope of the clinical practice, students spent one day each week in a training and research hospital. In both internal and surgical units, the students took the patients’ histories with the data-collection form structured according to the FHP Model and prepared a nursing

care plan that addressed the NANDA-I diagnoses. At the end of the clinical practice, the students submitted their care plans to the lecturer responsible for the course.

The students were asked to write all appropriate nursing diagnoses for the patients they cared for according to priority. Students identified a total of 301 NANDA-I diagnoses and prepared care plans for at least two of these diagnoses. Five of these care plans that were not consistent with the nursing process were excluded. When the same diagnoses determined by the students were removed, 42 different nursing diagnoses were evaluated. It was determined that a total of 143 care plans prepared for these diagnoses were appropriate for the nursing process (See Figure 1).

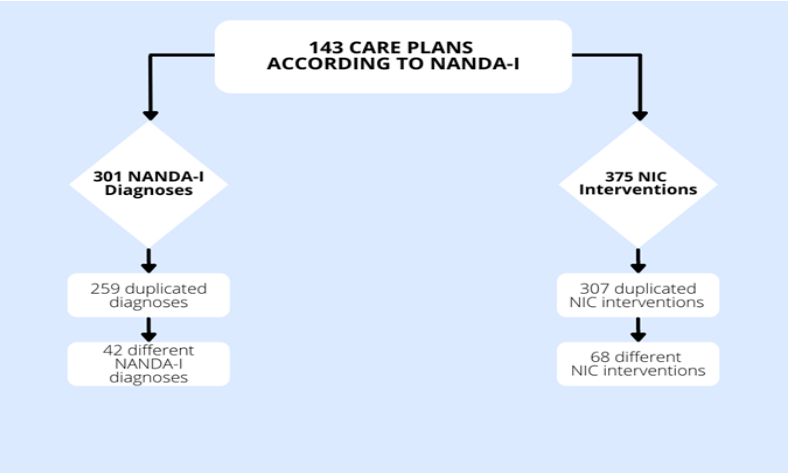

Figure 1. Study flow diagram

Ethical Aspect of the Study

To carry out the research, the non-interventional research ethics committee of a university (Date: 05.07.2022, No: 124) and the Faculty of Health Sciences of the university from which the data were obtained. The students were informed about the study, and their written consent was obtained when they submitted their care plans to the instructor responsible for the course.

Data Analysis

The SPSS (Statistical Package for the Social Sciences) 26.0 was used. To answer the research questions, descriptive statistics were used. These are shown as numbers and percentages.

Limitations of the Study

This research presents the results obtained by evaluating the nursing care plans prepared by first-year students studying at a nursing department in the clinical practice of the Fundamentals of Nursing course. The results can be generalized only to the group of students participating in this research. From NANDA-I, NOC, and NIC linkages where nursing care plans are standardized, not using NOC is considered another limitation of the study.

Results

Table 1 shows the distribution of nursing diagnoses identified by the students. Among the diagnoses, risk for infection (00004) was the one most frequently used (n=40), while the least used were risk for suicide (00150), excess fluid volume (00026), impaired memory (00131), impaired comfort (00214), diarrhea (00013), dysfunctional gastrointestinal motility (00196), stress urinary incontinence (00017), situational low self-esteem (00120), dysfunctional family processes (00063), and risk for delayed surgical recovery (00246) (n=1) (Table 1).

Table 1: Nursing Diagnoses (n= 301)

	Diagnosis	n	%
1	Risk for infection (00004)	40	13.29
2	Anxiety (00146)	33	10.96
3	Acute pain (00132)	29	9.63
4	Risk for adult falls (00303)	27	8.97
5	Impaired skin integrity (00046)	18	5.98
6	Deficient knowledge (00126)	16	5.32
7	Disturbed sleep pattern (00198)	15	4.98
8	Decreased activity intolerance (00092)	11	3.65
9	Ineffective breathing pattern (00032)	11	3.65
10	Impairment physical mobility (00085)	8	2.66
11	Disturbed body image (00118)	8	2.66
12	Risk for aspiration (00039)	8	2.66
13	Impaired gas exchange (00030)	7	2.33
14	Deficient fluid volume (00027)	7	2.33
15	Feeding self-care deficit (00102)	6	1.99
16	Impaired oral mucous membrane integrity (00045)	5	1.66
17	Risk for bleeding (00206)	4	1.33
18	Decrease cardiac output (00270)	4	1.33
19	Impaired tissue integrity (00044)	3	1.00
20	Imbalanced nutrition: Less than body requirements (00002)	3	1.00
21	Excess fluid volume (00026)	3	1.00
22	Impaired swallowing (00103)	3	1.00
23	Nausea (00134)	3	1.00
24	Risk for imbalanced fluid volume (00025)	3	1.00
25	Risk for unstable blood glucose level (00179)	2	0.66
26	Adult pressure injury (00312)	2	0.66
27	Hyperthermia (00007)	2	0.66
28	Impaired urinary elimination (00085)	2	0.66
29	Powerlessness (00125)	2	0.66
30	Fatigue (00093)	2	0.66
31	Social isolation (00)	2	0.66
32	Impaired verbal communication (00053)	2	0.66
33	Risk for suicide (00150)	1	0.33
34	Excess fluid volume (00026)	1	0.33
35	Impaired memory (00131)	1	0.33
36	Impaired comfort (00214)	1	0.33
37	Diarrhea (00013)	1	0.33
38	Dysfunctional gastrointestinal motility (00196)	1	0.33
39	Stress urinary incontinence (00017)	1	0.33
40	Situational low self-esteem (00120)	1	0.33
41	Dysfunctional family processes (00063)	1	0.33
42	Risk for delayed surgical recovery (00246)	1	0.33

In Table 2, NANDA-I diagnoses are listed according to the FHP Model. Of the diagnoses, 93 were in the nutritional–metabolic pattern, 51 in the cognitive–perceptual pattern, 49 in the activity–exercise pattern, 46 in the self-perception–self-concept pattern, 36 in the health perception–health management pattern, 15 sleep–rest patterns, 5 elimination patterns, 5 role–relationship patterns, and 1 coping–stress tolerance pattern.

Table 2: Distribution of Nursing Diagnoses According to FHP (*n*= 301)

	FHP	n	%
1	Nutritional–metabolic pattern	93	30,90
2	Cognitive–perceptual pattern	51	16,95
3	Activity–exercise pattern	49	16,28
4	Self-perception–self-concept pattern	46	15,28
5	Health perception–health management pattern	36	11,96
6	Sleep–rest pattern	15	4,98
7	Elimination pattern	5	1,66
8	Role–relationship patterns	5	1,66
9	Coping–stress tolerance pattern	1	0,33

FHP: Functional Health Patterns

In the care plans, interventions for each diagnosis were matched with 68 different NIC interventions in the NIC guide (Table 3). A total of 375 NIC interventions were applied by the students. While the most frequently applied intervention was medication management (2380) (n=30), the least applied interventions were tube care: gastrointestinal (1874), aspiration precautions (3200), self-care assistance: toileting (1804), exercise therapy: joint mobility (0224), urinary incontinence care (0610), medication administration: nasal (2320), nausea management (1450), medication administration: oral (2304), nutritional therapy (1120), progressive muscle relaxation (1460), massage (1480), bleeding precautions (4050), self-esteem enhancement (5400), swallowing therapy (1860), urinary elimination management (0590), fluid resuscitation (4140), gastrointestinal intubation (1080), guided imagery (6000) and socialization enhancement (5100) (n=1).

Table 3: Nursing Interventions (*n*= 375)

	NIC	n	%
1	2380 Medication management	30	8.00
2	0840 Positioning	28	7.47
3	6550 Infection protection	22	5.87
4	1400 Pain management	22	5.87
5	6680 Vital sign monitoring	20	5.33
6	6610 Risk identification	18	4.80
7	6486 Environmental management: Safety	13	3.47
8	6540 Infection control	11	2.93
9	4920 Active listening	10	2.67
10	1710 Oral health maintenance	10	2.67
11	5230 Coping enhancement	9	2.40
12	3350 Respiratory monitoring	9	2.40
13	6490 Fall prevention	9	2.40

Table 3: Nursing Interventions (*n*= 375)- continued

14	0200 Exercise promotion	8	2.13
15	3590 Skin surveillance	8	2.13
16	2080 Fluid management	7	1.87
17	1100 Nutrition management	7	1.87
18	6650 Surveillance	7	1.87
19	6480 Environmental management	6	1.60
20	1380 Heat/cold application	6	1.60
21	3520 Pressure ulcer care	6	1.60
22	5612 Teaching prescribed exercise/activity	5	1.33
23	2314 Medication administration: Intravenosus	5	1.33
24	5618 Teaching: Procedure/treatment	5	1.33
25	3160 Airway suctioning	5	1.33
26	4120 Fluid management	5	1.33
27	5820 Anxiety reduction	4	1.07
28	6040 Relaxation therapy	4	1.07
29	5900 Distraction	4	1.07
30	3320 Oxygen therapy	4	1.07
31	3584 Skin care: Topical treatments	4	1.07
32	5440 Support system enhancement	3	0.80
33	0180 Energy management	3	0.80
34	1910 Acide case management	3	0.80
35	6545 Infection control: Intra operative	3	0.80
36	2304 Medication administration: Oral	3	0.80
37	5880 Calming technique	3	0.80
38	5606 Teaching: Individual	3	0.80
39	1240 Weight gain assistance	3	0.80
40	4400 Music therapy	3	0.80
41	5270 Emotion support	2	0.53
42	1850 Sleep enhancement	2	0.53
43	3250 Cough enhancement	2	0.53
44	5330 Mood management	2	0.53
45	5246 Nutrition counseling	2	0.53
46	1720 Oral health promotion	2	0.53
47	5395 Self-efficacy enhancement	2	0.53
48	5616 Teaching: Prescribed medicine	2	0,53
49	1160 Nutritional monitoring	2	0,53
50	1874 Tube care: Gastrointestinal	1	0.27
51	3200 Aspiration precautions	1	0.27
52	1804 Self-care assistance: Toileting	1	0.27
53	0224 Exercise therapy: Joint mobility	1	0.27
54	0610 Urinary incontinance care	1	0.27
55	2320 Medication administration: Nasal	1	0.27
56	1450 Nausea management	1	0.27
57	2304 Medication administration: Oral	1	0.27
58	1120 Nutrition therapy	1	0.27
59	1460 Progressive muscle relaxation	1	0.27
60	1480 Massage	1	0.27
61	4050 Bleeding precautions	1	0.27
62	5400 Self esteem enhancement	1	0.27
63	1860 Swalloving therapy	1	0.27
64	0590 Urinary elimination management	1	0.27
65	4140 Fluid resuscitation	1	0.27
66	1080 Gastrointestinal intubation	1	0.27
67	6000 Guided imagery	1	0.27
68	5100 Socialization enhancement	1	0.27

NIC: Nursing Interventions Classifications

The most frequently identified NIC for risk for infection nursing diagnosis is medication management (2380), active listening for anxiety diagnosis (4920), and medication management for acute pain diagnosis (2380) (Table 4).

Table 4. Linkages of NANDA-I Diagnoses and NIC Interventions (*n*= 102)

NANDA-I	FHP	NIC*
Risk for infection	Nutritional–Metabolic	2380 Medication Management 6550 Infection Protection 6680 Vital Sign Monitoring 6610 Risk Identification 6540 Infection Control 1160 Nutritional Monitoring 6545 Infection Control: Intra Operatif 1120 Nutrition Therapy
Anxiety	Self-perception– Self–concept	4920 Active Listening 5230 Coping Enhancement 6480 Environmental Management 5900 Distraction 6040 Relaxation Therapy 5820 Anxiety Reduction 4400 Music Therapy
Acute pain	Cognitive–Perceptual	2380 Medication Management 0840 Positioning 1400 Pain Management 6680 Vital Sign Monitoring 5230 Coping Enhancement 0200 Exercise Promotion 6480 Environmental Management 1380 Heath/Cold Application 2314 Medication Administration: Intravenosus 5900 Distraction 5880 Calming Technique 4400 Music Therapy 2304 Medication Administration: Oral 5606 Teaching: Individual 5270 Emotion Support 1850 Sleep Enhancement 1480 Massage 1460 Progressive Muscle Relaxation 6000 Guided Imagery

* Sorted by frequency of application from most to least.
NANDA-I: North American Nursing Diagnoses Association-I, NIC: Nursing Interventions Classifications, FHP: Functional Health Patterns

Discussion

In this era of globalization and computerization, the use of correct language to describe the scope of nurses' activities is essential for modern nursing education and practice.[12] Different nursing-care classification systems are used around the world to create a common language in nursing care and to provide holistic patient care. Among them, the most widely used are the NANDA-I, NIC, and Nursing Outcomes Classification (NOC) systems.[17] Of these, NANDA-I is used to determine nursing diagnoses. The most-common NANDA-I diagnoses in this study

are risk for infection (00004), anxiety (00146), and acute pain (00132). The results of the present research are similar to those of other studies in the literature.[8,10,13,14,18-20] A similar study conducted in a Surgical Diseases Nursing course practice found that the diagnoses of deterioration in skin integrity,[10] sleep disturbance, and bleeding risk[18] were frequently included. When the results obtained within the scope of the research and the literature are examined, it is noteworthy that the nursing diagnoses determined by the students are easily observed, easily expressed by the patient, and do not require systematic evaluation. It is thought that the frequent practice of students in internal and surgical clinics increases the frequency of these diagnoses.

For this study, a data-collection form based on the FHP Model, which offers a systematic approach to comprehensive data collection and holistic treatment of the patient, was used. It was determined that the most frequently discussed diagnoses belonged to the field of nutritional–metabolic patterns, and there were no diagnoses from the fields of sexuality–reproductive patterns, and value–belief patterns. Studies have revealed that nurses and nursing students find it difficult to obtain a sexual health history.[10,18,21,22] It is thought that students feel inadequate in regard to identifying sexuality-related problems for several reasons. One is that they are first-year students and, thus, have not yet taken the Obstetrics and Gynecology Nursing course. Another could be that individuals evaluate the topic of sexuality as private and refrain from talking about it; they may consider this subject a taboo, and privacy cannot be provided during the data-collection process due to the physical structure of the hospital. At the same time, although this result is thought to be related to the cultural characteristics of the country where the study was conducted, a study conducted in Italy found that nurses there also have problems talking about and evaluating patients' sexual problems.[23]

Another area of FHPs that has never been diagnosed in a nursing context is the value–belief pattern, which expresses the cultural and ethnic background of individuals and their beliefs about spirituality and is closely related to their coping skills. Although this area is one of the most important in the perception, protection, and development of health, it is not considered a priority as a physiological need.[24,25] At the same time, the fact that the clinical practice is one day a week and students have not yet taken the Mental Health and Diseases Nursing course resulted in less data collected about the patterns of coping–stress tolerance and role relationships. This suggests that it may restrict their holistic approach toward the patient and cause them to collect data in physiological areas and make a care plan. For this reason, it is thought that students deal with more concrete data.

In this research, medication management (2380), positioning (0840), infection protection (6550), pain management (1400), and vital sign monitoring (6680) NIC interventions were frequently preferred. Because the students were in their first year, had no previous clinical-practice experience, and did not feel competent to perform their roles independently, they may have prioritized interventions for collaborative roles. Similarly, a study found that nursing students used the following nursing interventions; "administration of analgesic drugs at the physician's request," "informing patients about the procedures performed," "vital sign monitoring" and "positioning".[18] In a study conducted in Italy, as in our study, medication management was one of the most frequently used NIC interventions.[23] In a study in which the diagnoses and interventions used by Korean nursing students during clinical practice in internal–surgical units were determined, the most frequently used interventions in the diagnosis of pain were vital sign monitoring, medication management, calming technique, emotional support, and positioning attempts.[13] Although vital signs monitoring is a basic and critical nursing practice applied at all levels of nursing, it is not a frequent intervention applied by students in our study. It could also be that they may not have recorded it because it is a routine practice, and they do not consider the situation as a nursing intervention.

Conclusion

The care plans prepared by first-year nursing students in their first clinical experience were mostly related to physiological evaluation processes and included less nursing diagnoses related to psychosocial areas. Today, when holistic patient care is gaining importance, it has become a necessity to maintain care processes within the scope of a holistic model. In light of all this information, students should be equipped with critical thinking skills and the ability to provide holistic patient care through practices such as case analysis and case discussions. Additionally, administrators, researchers and educators should cooperate to include international nursing classification systems, which are an important guide in holistic and systematic evaluation of the patient, in the care process. Terefore, conducting the study to include second, third, and fourth-year nursing students could yield important results in evaluating student development.

Conflicts of interest

There are no conflicts of interest.

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Authors contributions

All authors have agreed on the final version drafting the article. Each one author's contributions:

Conceptualization and Design: NU, DG

Data Collection: BDS, GA, GO, MC

Data Analysis: NU, DG, GO

Manuscript Writing: BDG, GA, GO, MC

Critical revisions for important intellectual content: NU, DG

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