



# Commonly used diagnostic label, classes, domain, and formulation among nursing students in Ibadan, Oyo State Nigeria

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## Abstract:

**BACKGROUND:** In order to select nursing actions that will produce the desired results, a nursing diagnosis is crucial. Despite this, it can be challenging for nursing students to recognize and create precise nursing diagnostic labels that are particular to a patient's situation. The study's objectives are to identify the diagnostic labels, classes, and domains that are frequently formulated by nursing students.

**MATERIALS AND METHODS:** A descriptive cross-sectional methodology and a self-developed questionnaire were utilized to gather information from 120 nursing students who were chosen using a simple random sampling technique. Descriptive and inferential (Chi-square) statistics were used to analyze the data. The 0.05 *P*-value was chosen.

**RESULTS:** The respondent's average age is  $23 \pm 21.4$  years. The majority of respondents (94.2%) concurred that greater exposure to clinical settings, case discussion methods (92.5%), as well as group case studies (90.8%) strategy, can all improve the creation of precise diagnostic labels. Additionally, the deficient fluid volume diagnostic label is the one that is most usually utilized (78.3%). Overall results show that the diagnostic labels that are used the most frequently are those for domains 4 (Activity/Rest) and 11 (Safety/Protection). There was no relationship ( $P = 0.061$ ) between the commonly used diagnostic label and the chosen schools.

**CONCLUSION:** The study offered empirical data on the most used diagnostic labels and domains. Therefore, it will be important that nursing students involve critical reasoning skills as well as familiarize themselves with other significant domains and classes that are useful in the patient's care.

## Keywords:

Advance nursing process, NANDA-I, Nigeria, nursing students

## Introduction

The nursing process is a notion that Lydia Hall first articulated in the 90s and it consists of five interrelated steps.<sup>[1]</sup> Assessment, diagnosis, planning, and implementation are the steps. It serves as the cornerstone for nurses' evidence-based decision-making.<sup>[2]</sup> The second part of the nursing process, diagnosis, is crucial for providing patients with an accurate

intervention. The most crucial step in the nursing care process is believed to be nursing diagnosis.<sup>[3]</sup> Nursing diagnosis clarifies conditions that nurses care for, aids in determining the range of nursing practice, and produces terminology that is uniform and easily understood by all nurses.<sup>[3]</sup>

Understanding standardized nursing language (SNL) is necessary for the nursing diagnosis.<sup>[4]</sup> Nurses use SNL, a structured

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vocabulary, to communicate patients' situations in a shared language.<sup>[4]</sup> According to Falan,<sup>[5]</sup> different nurses have different methods for identifying nursing diagnoses, and certain nursing diagnostic labels do not adhere to the international nursing diagnosis standard known as North American Nursing Diagnosis-I (NANDA). One of the 12 SNLs used by nurses to communicate about patient care is NANDA-I.

According to studies, nursing students view and behave favorably toward NANDA-I nursing diagnostic.<sup>[6,7]</sup> However, the convenience of employing them in clinical practice is not reflected in this perception or attitude.<sup>[6]</sup> This was linked to the challenges nursing students have while creating an appropriate diagnostic label.<sup>[7]</sup> Making an appropriate nursing diagnosis is essential for treating a patient's health issue.<sup>[6]</sup> Additionally, 83% of diagnostic labels were discovered to be unrelated to the 247 labels of the North America Diagnosis Association, this is also a case in Nigerian Hospitals.<sup>[8,9]</sup>

The future healthcare professionals being taught as student nurses are expected to learn all aspects of nursing diagnosis.<sup>[9]</sup> In undergraduate nursing education, nursing educators put a strong emphasis on using a variety of training techniques to enhance students' active learning and critical thinking abilities with regard to the nursing process and nursing diagnosis.<sup>[3]</sup>

Group care studies significantly aided nursing students in developing accurate diagnostic labels.<sup>[3]</sup> It has been found that developing precise diagnostic labels necessitates the capacity for critical thought. Peer assessment helps students strengthen their critical thinking skills, which enhances the production of accurate diagnostic labels.<sup>[10]</sup>

The most widely used SNL in Nigerian hospitals and healthcare institutions in North America Nursing Diagnosis Association-International (NANDA-I). The NANDA-I is used to determine the best nursing diagnoses for a given medical state. It provides a means for nurses to diagnose the patient's indications and symptoms in a language that is specific to nurses.<sup>[11]</sup> If nursing students are able to make accurate nursing diagnoses. It is expected that patients' outcomes will be enhanced because appropriate nursing intervention will be carried out on the patient.

In essence, NANDA-I creates, explains, and disseminates the taxonomy of nursing diagnosis that is frequently utilized by professional nurses.<sup>[12]</sup> NANDA-I (2018–2020) states that NANDA-I consists of three levels: 13 domains, 47 classes, and 247 nursing diagnoses.<sup>[12]</sup> The usage of these is anticipated in nursing practice. According to studies conducted in the developed world, the Burn Unit in an Iranian hospital only used six

different diagnostic labels in all.<sup>[8]</sup> Güler *et al.* (2012)'s<sup>[13]</sup> analyses found that 165 nursing diagnoses spread throughout the taxonomy's several domain groups were identified.

In the study by Paans and Muller-Staub<sup>[14]</sup> (2015), nurses' patient paperwork had 47 labels. Cultural variations undoubtedly have an impact on how nursing diagnoses are assessed and recorded.<sup>[15]</sup> The nursing diagnoses are either not performed extensively or continuously at the hospitals in Nigeria or are performed very poorly for three reasons: inadequate faculty and nurse understanding of the nursing diagnoses, a lack of necessary infrastructure, and a lack of supportive nursing institutions and managers.<sup>[15]</sup> The Iranian situation can also be characterized by this scenario.<sup>[16]</sup> Additionally, there is a need for a diversity of nursing diagnostic label, classes/domains to be used by nursing students other than repeating the commonly used ones that they are used to. When this situation happens, it shows that the students do not understand the importance of making appropriate diagnoses.

So far, no study has been done in Nigeria to date to evaluate the domain and formulation of the most frequently used diagnostic label classes among students. However, a study on nursing diagnosis domains conducted in Nigeria was among nurses in the intensive care unit of a tertiary institution.<sup>[17]</sup> The quality of nursing documentation and the usage of standardized nursing languages have received increasing attention in studies on nursing documentation in Nigeria. These investigations found that in a few tertiary institutions, the quality of nursing documentation was moderate.<sup>[15,18,19]</sup>

These studies examined patient records based on nursing activities, however, they paid less attention to nursing students' documenting practice of nursing diagnosis labels and their formulation and instead concentrated on clinicians who were nurses. The study identified the most frequently used diagnostic label, classes, domain, and its formulation among nursing students in Ibadan, Oyo State, Nigeria as a result of the aforementioned.

### Specific Objectives of the Study

The following specific objectives were to:

- Identifying the factors that enhanced the formulation of accurate diagnostic labels among nursing students in selected institutions.
- Assess the classes and domains of the most common diagnostic labels among nursing students at the chosen institutions.

## Hypothesis

There is no significant relationship between the identified factors among nursing students and the selected schools.

## Materials and Methods

### Study design and setting

The formulation and commonly used diagnostic label classes and domains by Nursing Students in institutions in Ibadan, Oyo State Nigeria were described in this descriptive cross-sectional survey. The two institutions of nursing in Ibadan, Oyo state (School of Nursing, Eleyele, Ibadan and Department of Nursing, University, Ibadan) that award nursing degrees were selected as the study setting. The faculty of clinical sciences under the College of Medicine at the University of Ibadan houses the Department of Nursing, from which graduates complete a bachelor program. There are 1:11 lecturers to students. A division of the Oyo State College of Nursing and Midwifery, Eleyele, Ibadan, Oyo State, is the School of Nursing. There are around 200 students in this school of Nursing, and there is 1 lecturer for every 5 students. At the conclusion of the student's studies at this institution, graduates receive a nursing diploma certificate. The two institutions were specifically chosen because their students are taught nursing languages.

### Study participants and sampling

For this study, eighty-five (85) students were chosen from the University of Ibadan, these students were in the following years of their study, 300- 500, and the 35 third-year nursing students at Eleyele School of Nursing. The nursing students from both institutions (the school of nursing and university). These nursing students are exposed to the nursing process which is a course in their curriculum. This avails them of the opportunity to be exposed to nursing language teaching from their second year as well as during their clinical posting in the wards of the hospitals. Every element in the population had an equal chance of being selected for the study. The researcher used the balloting method to achieve this in both institutions. "Yes" and "No" were written on the paper and the respondents were allowed to pick. Those who picked "Yes" were included in the study.

A sample size of 120 students was calculated using the Taro Yamane formula (Yamane, 1973). A simple random sampling technique was utilized to select a total of 120 nursing students from the study population. The study only included nursing students at the University of Ibadan's 300, 400, and 500 levels; the university's 100 and 200-level students were excluded. Students in years 1 and 2 of the nursing program at the Eleyele School of Nursing were not included; only year 3 nursing students were. Additionally, those who were ill and unable to

participate in the study during the data collection were not included.

### Data collection tool and technique

A self-developed questionnaire with a 0.93 Cronbach's alpha value was used to collect the data. Nursing diagnostics experts validated the questionnaire and assessed its validity in terms of its content. The questionnaire was divided into four (4) sections: While Section B comprises frequently used diagnostic terminology extracted from the NANDA-I textbook (2018–2020), Section A collected data on demographics. The questions in Section D focus on factors that can enhance the development of precise diagnostic labels among students in the chosen institutions, which is the main objective of this publication. Questions in Section C ask about any problems the selected students had utilizing NANDA-I. Nursing students expressed their approval verbally and in writing, and only those students received the questionnaires to complete. At the start of the questionnaire, instructions on how to complete it were laid out clearly, and where appropriate, explanations were provided. From Monday through Friday, during their spare time, nursing students were approached directly, and the completed questionnaire was then gathered. In order to assist with the distribution of the questionnaires, a research assistant was assigned. Data was collected from 31 August to 21 September 2021.

Data analysis was done using SPSS version 20.0, a statistical software for social sciences. Chi-square was employed to examine the relationship between variables, and descriptive statistics like a frequency distribution table were utilized to evaluate and show the data. The Chi-square test's *P*- value was set at 0.05.

### Ethical consideration

The ethics committee granted its clearance for this study with the approval number UI/EC/21/0446 before it could begin. The participants were duly informed and consent was also signed prior to the study.

## Results

### Data on socio-demographics

The 120 chosen respondents' sociodemographic information is shown in Table 1. According to the age distribution, 107 (89.2%) of the respondents are primarily between the ages of 20 and 25. The mean age of the respondents is  $23 \pm 21.4$  years. The majority of respondents are women (85.0%). The respondents' educational backgrounds are virtually similarly dispersed, with the bulk of 35 (29%), respondents, attending the School of Nursing in Eleyele's third year. The majority of respondents, 105 (87.5%), are Yoruba ethnic group. The findings from this study could be

**Table 1: Respondents' sociodemographic information (n=120)**

Variable	Mean Age of the respondents	Frequency	Percentage (%)
Age	Mean±SD		
<20 years	23±21.4	5	4.2
20–25 years		107	89.2
>25 years		8	6.7
Gender			
Male		18	15.0
Female		102	85.0N
Marital status			
Single		119	99.2
Married		1	0.8
School			
University of Ibadan		85	70.8
School of nursing		35	29.2
Level			
300		29	24.2
400		25	20.8
500		31	25.8
Year 3		35	29.2
Religion			
Christianity		99	82.5
Islam		21	17.5
Ethnic group			
Igbo		13	10.8
Hausa		2	1.7
Yoruba		105	87.5

a result of the geographical location where the study setting is found, where the majority of the locality is Yoruba-speaking tribes.

### Factors that can enhance the formulation of accurate diagnostic labels

Table 2 lists the numerous elements that can help nursing students develop precise diagnostic labels. According to the table, 113 respondents, or 94.2%, agreed that more experience in clinical settings can improve the creation of precise diagnostic labels. Additionally, the vast majority 111 of them (92.5%) agreed that applying the case discussion approach to teach NANDA-I use can improve the creation of precise diagnostic labels. The majority (90.8%) of respondents also concurred that using group case studies to teach NANDA-I usage can improve the creation of precise diagnostic labels.

### Commonly used diagnostic label domains and classes

The most utilized diagnostic labels in NANDA-I are displayed in Table 3. Deficient fluid volume (89.1%) is the most often used diagnostic term in this table. Acute pain (85.9%), anxiety (85.9%), hyperthermia (85.1%), ineffective breathing pattern (85%), activity intolerance (85%), deficient fluid volume (89.1%),

imbalanced nutrition less than body requirements (87.5%), impaired skin integrity (87.5%), impaired physical mobility (86.7%), and impaired tissue integrity (84.2%) are the top ten most frequently used nursing diagnostic labels.

### Bivariate analysis

Table 4 demonstrates that there is no significant relationship between students' years in the chosen institutions and the commonly used diagnostic term "deficient fluid volume" ( $P = 0.061$ ).

## Discussion

### Respondents' sociodemographic information

Due to the nature of the profession globally, women made up the majority of the respondents to this study. Comparable to the study done by Olatubi *et al.*,<sup>[19]</sup> in Nigeria, where the majority of respondents were single, and over half were between the ages of 20 and 25. This result demonstrates that in Nigerian institutions, nursing is a profession dominated by women. The Yoruba tribe likewise makes up the majority of the responses. This may be explained by the fact that the study was carried out in Southwest Nigeria, an area largely populated by Yoruba people.

### Factors that can enhance the formulation of accurate diagnostic labels

A higher proportion of participants in this survey felt that the ability to create precise diagnostic labels would be improved through exposure to clinical settings. This study is comparable to one that Melek *et al.*, (2019)<sup>[1]</sup> conducted in Turkey in 2019 regarding the challenges faced by nursing students while using NANDA-I diagnosis for care management. Comparable to our study is that carried out by Cigdem *et al.*, (2020)<sup>[20]</sup> in Turkey, more over half of the respondents agreed that group care studies will improve the formulation of correct diagnostic labels. Additionally, more than half of respondents concurred that peer review will improve the creation of correct diagnostic labels, which is similar to the research done by Tulay<sup>[10]</sup> in Turkey in 2019. The results of our study have demonstrated that case discussion will assist student nurses in applying what they have learned in the classroom, making it simpler to develop precise diagnostic labels.

### Commonly used diagnostic labels: domains and classes

According to this study, the top ten most frequently used diagnostic labels are inadequate fluid volume, imbalanced nutrition less than body requirements, impaired skin integrity, impaired physical mobility, acute pain, anxiety, hyperthermia, ineffective breathing pattern, activity intolerance, and impaired tissue



**Table 2: Distribution showing factors that can enhance the formulation of accurate diagnostic labels among respondents. (n=120)**

Variable	Yes		No	
	Frequency	%	Frequency	%
Increased exposure to the clinical setting	113	94.2	7	5.8
Use of case discussion method as a method of teaching the use of NANDA-I	111	92.5	9	7.5
Use of peer assessment method as a method of teaching the use of NANDA-I	107	89.2	13	10.8
Use of group care studies as a method of teaching the use of NANDA-I	109	90.8	11	9.2

integrity. Deficient fluid volume, on the other hand, is the diagnosis that the majority of responders used the most frequently. The findings in the study by Melek *et al.*, (2019)<sup>[1]</sup> in Turkey assess the challenges faced. Similar to some of the frequently used diagnostic labels indicated in this study, nursing students utilize NANDA-I diagnoses in care management in a manner that is comparable to how some of the widely used diagnostic labels listed in this study are applied by nursing students.

In both studies, the diagnostic labels of activity intolerance, reduced physical mobility, anxiety, and acute pain were used. The fact that practically all illness problems share a few generic diagnostic names may be the cause of this uniformity. But there is a discrepancy between the most common diagnosis in the Melek *et al.*, (2019)<sup>[1]</sup> study and this study. Infection risk was the most popular diagnostic category, according to Melek *et al.*, (2019)<sup>[1]</sup> while inadequate fluid volume was the one found in this investigation. Given that some disease disorders are more distinctive to specific geographical regions, this might be caused by the differences in the settings being used.

In contrast to the findings of this study, a study Demir (2017),<sup>[21]</sup> conducted in Turkey to evaluate the proficiency of second-year students in describing nursing illnesses found that self-neglect was the most frequently used diagnostic word. The locational disparity between the two types of research may be the cause of this disagreement. However, both trials share the diagnostic diagnosis of decreased skin integrity. This study's findings, including some of the most commonly used diagnostic labels, are consistent with those of Turkan's<sup>[7]</sup> study in Turkey, "Evaluation of First-Year Nursing Students' Care Plans: Nursing Diagnosis and Nursing Interventions." Domain 2 (Nutrition), Domain 4 (Activity/Rest), Domain 9 (Coping/Stress Tolerance), Domain 11 (Safety/Protection), and Domain 12 are the domains of the regularly used diagnostic labels that were noted above (comfort). According to the study's findings, the two domains with the highest number of regularly used diagnostic labels are domains 11 (Safety/Protection) and 4 (Activity/Rest), each of which has three such labels. This runs counter to a 2017 study in Turkey by Turkan (2017),<sup>[7]</sup> which found that domain 9 (Coping/

Stress) was the most often used diagnostic term. This may be so because Turkan's<sup>[7]</sup> study only included first-year students and focused on a few specific wards and medical problems, whereas this study included students in grades 300, 400, 500, and year 3 and did not have a focus on any particular disease condition. Under domain 11, class 2 has the most diagnostic labels that are applied regularly.

Additionally, the study found that most respondents did not employ the diagnostic labels in domains 7 (Role/Relationship) and domain 8 (Sexuality). This study is comparable to one that was carried out by Turkan<sup>[15]</sup> in Turkey in 2017. It's possible that the pupils' emphasis on physical conditions rather than psychological conditions led to this connection.

## Implication to Nursing

### To practice

The study found a number of variables that could improve the creation of precise diagnostic labels. If these elements are used, an appropriate diagnosis will be formed, which will then result in the delivery of the proper nursing intervention. This will raise the standard of care provided to patients, which will increase patient satisfaction, decrease hospitalization, and ultimately lower healthcare costs and improve quality of life. Also, the commonly used diagnostic labels found in this study could be a result of the similarity in the wards the nursing students visit during their clinical experience/posting. However, it would be good if nurse clinicians could encourage the students to utilize other domains and classes in the course of patient care.

### To education

To improve the knowledge of nursing students on the formulation of accurate diagnostic labels, nurse educators can use the elements that can enhance the creation of more precise diagnostic labels for the symptoms this study uncovered. It will also help to direct the teaching practices of nurse educators because they will be aware of which strategies work and which do not. Additionally, nurse educators should encourage critical thinking and reasoning skills among students so that they can be familiar with other domains and classes that are useful in patient care.

**Table 3: Distribution showing the commonly used diagnostic labels**

Variable	Very Frequently F (%)	Frequently F (%)	Sometimes F (%)	Rarely F (%)	Never F (%)
Domain 1: Health promotion					
Ineffective health management	23 (19.2)	28 (23.3)	35 (29.2)	21 (17.5)	13 (10.8)
Ineffective family health management	20 (16.7)	27 (22.5)	33 (27.5)	26 (21.7)	14 (11.7)
Sedentary lifestyle	19 (15.8)	28 (23.3)	30 (25)	24 (20)	19 (15.8)
Domain 2: Nutrition					
Imbalanced nutrition less than body requirement	83 (69.2)	22 (18.3)	11 (9.2)	2 (1.7)	2 (1.7)
Impaired swallowing	20 (16.7)	37 (30.8)	29 (24.2)	22 (18.3)	12 (10)
Deficient fluid volume	85 (70.8)	22 (18.3)	10 (8.3)	2 (1.7)	1 (0.8)
Excess fluid volume	72 (60)	27 (22.5)	13 (10.8)	5 (4.2)	3 (2.5)
Risk for unstable blood glucose level	49 (40.8)	30 (25)	20 (16.7)	14 (11.7)	7 (5.8)
Risk for deficient fluid volume	70 (58.3)	31 (25.8)	11 (9.2)	4 (3.3)	4 (3.3)
Risk for excess fluid volume	53 (44.2)	33 (27.5)	17 (14.2)	11 (9.2)	6 (5)
Domain 3: Elimination and exchange					
Impaired Urinary elimination	58 (48.3)	28 (23.3)	21 (17.5)	9 (7.5)	4 (3.3)
Urinary incontinence (functional, overflow, reflex, stress, urge)	61 (50.8)	32 (26.7)	12 (10)	12 (10)	3 (2.5)
Urinary retention	50 (41.7)	43 (35.8)	16 (13.3)	10 (8.3)	1 (0.8)
Constipation	49 (40.8)	41 (34.2)	14 (11.7)	12 (10)	4 (3.3)
Diarrhea	45 (37.5)	44 (36.7)	18 (15)	10 (8.3)	3 (2.5)
Bowel incontinence	47 (39.2)	43 (35.8)	15 (12.5)	11 (9.2)	4 (3.3)
Impaired gas exchange	57 (47.5)	31 (25.8)	16 (13.3)	9 (7.5)	7 (5.8)
Domain 4: Activity/rest					
Insomnia	50 (41.7)	38 (31.7)	16 (13.3)	11 (9.2)	5 (4.2)
Impaired physical mobility	74 (61.7)	30 (25)	8 (6.7)	5 (4.2)	3 (2.5)
Disturbed sleep pattern	73 (60.8)	23 (19.2)	17 (14.2)	5 (4.2)	2 (1.7)
Fatigue	62 (51.7)	31 (25.8)	17 (14.2)	8 (6.7)	2 (1.7)
Activity intolerance	72 (60)	30 (25)	8 (6.7)	7 (5.8)	3 (2.5)
Ineffective breathing pattern	84 (70)	18 (15)	7 (5.8)	6 (5)	5 (4.2)
Decreased cardiac output	55 (45.8)	33 (27.5)	15 (12.5)	10 (8.3)	7 (5.8)
Self-care deficit	72 (60)	21 (17.5)	11 (9.2)	9 (7.5)	7 (5.8)
Risk for decreased cardiac output	41 (34.2)	32 (26.7)	24 (20)	17 (14.2)	6 (5)
Risk for activity intolerance	46 (38.3)	34 (28.3)	16 (13.3)	19 (15.8)	5 (4.2)
Risk for unstable blood pressure	45 (37.5)	35 (29.2)	16 (13.3)	14 (11.7)	10 (8.3)
Ineffective peripheral tissue perfusion	66 (55)	27 (22.5)	9 (7.5)	10 (8.3)	8 (6.7)
Risk for ineffective peripheral tissue perfusion	54 (45)	24 (20)	15 (12.5)	21 (17.5)	6 (5)
Domain 5: Perception/cognition					
Acute confusion	29 (24.2)	25 (20.8)	24 (20)	20 (16.7)	22 (18.3)
Ineffective impulse control	19 (15.8)	30 (25)	22 (18.3)	26 (21.7)	23 (19.2)
Deficient knowledge	67 (55.8)	31 (25.8)	9 (7.5)	8 (6.7)	5 (4.2)
Impaired memory	28 (23.3)	32 (26.7)	26 (21.7)	18 (15)	16 (13.3)
Impaired verbal communication	33 (27.5)	35 (29.2)	20 (16.7)	14 (11.7)	18 (15)
Domain 6: Self-perception					
Chronic low self-esteem	30 (25)	26 (21.7)	23 (19.2)	22 (18.3)	19 (15.8)
Situational low self-esteem	31 (25.8)	31 (25.8)	25 (20.8)	20 (16.7)	13 (10.8)
Disturbed body image	61 (50.8)	29 (24.2)	11 (9.2)	13 (10.8)	6 (5)
Domain 7: Role relationship					
Impaired parenting	26 (21.7)	22 (18.3)	21 (17.5)	21 (17.5)	30 (25)
Interrupted family processes	25 (20.8)	21 (17.5)	24 (20)	21 (17.5)	29 (24.2)
Impaired social interaction	27 (22.5)	16 (13.3)	28 (23.3)	20 (16.7)	29 (24.2)
Domain 8: Sexuality					
Sexual dysfunction	34 (28.3)	21 (17.5)	30 (25)	15 (12.5)	20 (16.7)
Ineffective sexuality pattern	28 (23.3)	26 (21.7)	22 (18.3)	20 (16.7)	24 (20)
Domain 9: Coping/stress tolerance					
Ineffective coping	52 (43.3)	32 (26.7)	19 (15.8)	8 (6.7)	9 (7.5)

*Contd...*

**Table 3: Contd...**

Variable	Very Frequently F (%)	Frequently F (%)	Sometimes F (%)	Rarely F (%)	Never F (%)
Anxiety	74 (61.7)	29 (24.2)	10 (8.3)	2 (1.7)	5 (4.2)
Ineffective family coping	34 (28.3)	32 (26.7)	20 (16.7)	16 (13.3)	17 (14.2)
Fear	46 (38.3)	23 (19.2)	21 (17.5)	16 (13.3)	14 (11.7)
Domain 11: Safety/protection					
Ineffective airway clearance	85 (70.8)	14 (11.7)	10 (8.3)	5 (4.2)	6 (5)
Impaired skin integrity	77 (64.2)	28 (23.3)	6 (5)	1 (0.8)	8 (6.7)
Impaired tissue integrity	75 (62.5)	26 (21.7)	8 (6.7)	4 (3.3)	7 (5.8)
Hyperthermia	75 (62.5)	26 (22.5)	8 (10)	4 (1.7)	7 (3.3)
Hypothermia	66 (55)	31 (25.8)	13 (10.8)	4 (3.3)	6 (5)
Risk for infection	83 (69.2)	21 (17.5)	8 (6.7)	6 (5)	2 (1.7)
Risk for fall	63 (52.5)	31 (25.8)	15 (12.5)	5 (4.2)	6 (5)
Risk for injury	71 (59.2)	25 (20.8)	10 (8.3)	8 (6.7)	6 (5)
Domain 12: Comfort					
Nausea	47 (39.2)	32 (26.7)	20 (16.7)	16 (13.3)	5 (4.2)
Acute pain	86 (71.7)	17 (14.2)	12 (10)	3 (2.5)	2 (1.7)
Impaired comfort	49 (40.8)	30 (25)	21 (17.5)	17 (14.2)	3 (2.5)
Chronic pain syndrome	27 (22.5)	33 (27.5)	25 (20.8)	19 (15.8)	16 (13.3)

**Table 4: Relationship between years and the commonly used diagnostic labels “deficient fluid volume”**

Variable	Deficient fluid volume (%)			$\chi^2$	Df	P
	High	Moderate	Low			
Level: 300	17	5	7	0.485 <sup>a</sup>	4	0.061
400	20	2	3			
500	22	8	1			
Year 3 (SON)	24	5	6			

<sup>a</sup>The significance value considered is  $P \leq 0.05$ . SON- School of Nursing

### To research

This study might act as the cornerstone for additional research studies. Researchers can make use of this study by emphasizing the discovered elements and putting them into practice to determine how effective they are at improving the creation of precise diagnostic labels. Also, studies on reasons why other domains and classes are rarely utilized should be looked into in another research study.

### Limitations and recommendation

There aren't as many studies on this topic as one might anticipate; hence, there isn't a thorough literature review. The generalizability of this study could be constrained by its small sample sizes. Questionnaires were utilized as the data-gathering tool. Despite these drawbacks, the study nonetheless offers pertinent and helpful data on elements that may improve the creation of precise diagnostic labels among bachelor and diplomate nursing students in emerging African nations. The researcher advises that additional research be done to see how the factors found can be used to address the challenges faced by nursing students using NANDA-I and how well they will be able to accomplish that. For more thorough responses, the study should include more participants.

### Recommendations

According to the study's findings, the researcher suggests doing the following:

- There is a need for nursing students to have access to enough knowledge about using NANDA-I.
- Hospital employees who work as nurses should be trained in its use so they may instruct nursing students on how to utilize NANDA-I in practice on the ward after they have learned the theory in class.
- Students in nursing should be exposed to clinical settings more frequently since this will enable them to become more familiar with the various patient diagnoses rather than only possessing academic information.
- By integrating these elements and contrasting the results with what would happen without them, researchers can take their work a step further.

### Conclusion

The overall results show that the most frequently used diagnostic labels are domains 4 (Activity/Rest) and 11 (Safety/Protection). Therefore, researchers advise nursing students to practice critical thinking when formulating diagnostic labels. Also, become familiar with other domains and classes that are helpful in-patient care.

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## Ethical approval

Ethical clearance to conduct this study was obtained from the University of Ibadan UI/UCH Ethics Committee (No. UI/EC/21/0446).

## Authors contribution

I.O.O: Conceptualized the study, methodology and, prepared and performed the review and editing of the manuscript. O.E.K.: Prepared the original draft, the formal analysis, and data curation. O.O.O.: Collaborated in resources and validation of manuscript. T.O.O.: Collaborated in resources and validation of manuscript. A.A.O.: Consulted study conceptualization and validation of the manuscript. P.O.A.: Consulted study investigation, supervision, and validation of the manuscript.

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## Conflicts of interest

There are no conflicts of interest.

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