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Difficulties Experienced in the use of North America Nursing Diagnosis International among Nursing Students in Selected Institutions in South West Nigeria

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Abstract

Objectives: The study examined the difficulties experienced in the use of NANDA-I Diagnosis among nursing students.

Materials and Methods: Descriptive cross-sectional design and a structured questionnaire were used to collect data among purposively selected 120 nursing students. The data were analyzed using descriptive and inferential (chi-square) statistics. P value was set at 0.05.

Results: The findings from the study showed that the most frequently used diagnostic label is Deficient fluid volume (89.1%) which is in Domain 2 (nutrition). Identified difficulties experienced were Biennial changes of NANDA-I (78.3%) and insufficient information on the use of nursing diagnoses (71.7%). Majority (94.2%) believed that case discussion (92.5%) might enhance the formulation of accurate diagnostic label. There was a statistically significant difference between the difficulties experienced in the use of NANDA-I among the schools (p=0.058).

Conclusion: The study provided empirical information of difficulties experienced. Therefore, nursing students should be taught using case discussion in teaching nursing diagnosis.

Keywords: Difficulties; Nanda-I; Nigeria; Nursing students

Introduction

Nursing process has been the primary practice tool used by nurses in practice to provide individualized care and solve patients' specific problems across all nursing specialties. Further, it also forms the foundation for nurses' decision making and evidence-based practice [1]. In order to improve skills in nursing process application, the North American Nursing Diagnosis Association-International (NANDA-I) offers a national and international standardization of diagnostic classification system to help the development of the nursing process. Nursing Diagnosis is essential for choosing nursing interventions to achieve the expected outcomes [2]. Inaccurate diagnosis leads to inaccurate planning, implementation, and evaluation which in turn leads to poor delivery of healthcare services to patients. The Nursing Diagnosis consists of three parts that include an individual's problem, etiological factors, and defining characteristics [3]. While, NANDA-I taxonomy II shows that there are twelve domains and six classes.

NANDA-I provides a means through which nurses can document the diagnosis of the patient's signs and symptoms in a term specific to nurses. Therefore, nursing students need to be vast and knowledgeable in the use of NANDA-I for diagnosis so as to enhance effective communication among nurses and other health care providers [4-7]. The accuracy of diagnosing a patient based on the signs and symptoms determine the effectiveness of the care that will be given because the diagnosis made will determine the interventions that will be implemented. Students who gain the habit of using nursing diagnoses during the education period continue to use this diagnosis in their professional life. Besides, the use of nursing diagnosis is significant for a nursing student to understand nursing roles in clinical practice [8-11]. Literature have shown that nursing students experienced difficulties in certain steps of the nursing process especially the nursing diagnosis or in the entire nursing process during clinical applications. Nursing students were able to identify correct diagnoses, but not at the desired level. By the way, it is stated in the literature that nursing diagnoses are taught in nursing schools but not applied in clinical settings [12]. Although the nursing process, which is the application of a scientific method to nursing care, is taught to students in the context of nursing education, it was determined that students have experienced difficulties when preparing care plans.

Failure of nurses to comply with nursing process may lead to services that are unsystematic, poor nursing care quality, poor outcome of disease, patient being re-admitted, not satisfied with the care rendered and increased mortality [13]. The gap between knowledge of nursing process (nursing diagnosis) and its use in clinical practice is the most persistent problem in quality health care provision. The student nursing students, trained as health professionals to be in the future are supposed to learn nursing diagnoses in all dimensions. Students need to be vast in the use of NANDA-I diagnosis for them to be proficient nurses in the future.

NANDA-I is the most commonly used standardized nursing language in Nigerian health care system, nursing students and nurses need to be vast and proficient in handling it to be able to make the correct and accurate diagnosis. This skill is often taught in schools and it needs to be mastered effectively [14]. Literature has shown that studies in the area of difficulties experience by students in the use of NANDA-I abound in developed countries. But there is paucity of empirical data in developing countries especially Nigeria on the above subject. It is imperative that this study be carried out to find out the difficulties nursing student's experience. Also, it would not be nice if nursing students who will be handed the baton of caring for patients in the future cannot effectively use the NANDA-I diagnostics in preparing a care plan as this forms the bedrock of nursing care. The inability of nursing students to effectively use NANDA-I in the planning of care for patients might affect the quality of care their patients will receive when they start working as nurses in the nearest

future. Hence, it is important to identify common diagnostic label and difficulties experience when using the NANDA-I.

Nursing process is a systematic approach to care using the fundamental principles of critical thinking, client-centered approaches to treatment, goal-oriented tasks, evidence-based practice recommendations, and nursing intuition. It is a tool for both students and nurses to help ensure a consistent and strategic approach to patient care. It functions as a systematic guide to client-centered care with six sequential steps. These are assessment, diagnosis, Outcome Identification/planning, implementation, and evaluation. These six steps are used cyclically and repeatedly during patient care. The sequence must be followed from start to finish ensuring that the needs of the patient are addressed. For the purpose of this manuscript the diagnosis phase will be discussed because it is an essential phase. If missed, interventions given to client will not be appropriate.

Nursing diagnoses is human responses to health problems and/or life processes using the NANDA-I diagnosis taxonomy. While NANDA-I taxonomy provides a way to classify and categorize areas of concern to the nursing professional (i.e. diagnostic foci). Domains are divided into classes, which are groupings that share common attributes. Examples are activity/rest, coping/stress tolerance, elimination/exchange, and nutrition etc. A few of the studies have shown the commonly used diagnostic labels in care management were risk for infection, the risk for constipation, activity intolerance, impaired physical mobility, disturbed sleep pattern, fatigue, risk for fall, deficient knowledge, anxiety, acute pain, and risk for impaired skin integrity [15]. In spite of the use of nursing diagnosis, studies have shown that nursing students still experience difficulties in its use. Some of these difficulties were that nursing students perceived the ease use of NANDA negatively, lack of experience, difficulty in establishing verbal communications with patients, inability to master completely the diagnosis and theoretical knowledge, lack of experience and inability to receive sufficient education about diagnoses. Furthermore, factors that can enhance formulation of accurate diagnostic label according literature include; group care studies and peer assessment among others.

Materials and Methods

Study design

This is a descriptive cross-sectional survey that described the difficulties experienced in the use of NANDA-I diagnostic labels by Nursing students in selected universities.

Study setting

The study was carried out in two institutions namely; Department of Nursing, University of Ibadan, and School of Nursing, Eleyele, Ibadan, both in Oyo State. The Department of Nursing is under the faculty of clinical sciences where graduate undergo baccalaureate programme. The ratio of lecturers to students is 1:11. There are approximately 300 students in the department across the levels (100-500 levels).

School of Nursing, Eleyele, Ibadan, Oyo State is a department in Oyo state College of Nursing and Midwifery. The ratio of lecturers to students is 1:5. There are approximately 200 students in the school across the levels (100-300 levels). The students upon graduation bagged diploma certificate in nursing. The rationale behind selecting these institutions is that nursing diagnosis is taught as a topic under the course “Nursing Process”.

Procedure for data collection

A total of 120 students were selected as the sample population using purposive sampling technique across the institutions because these students have been taught nursing diagnosis in the training school. Only students in the year three of the school of nursing were selected. While 300, 400 and 500 levels were selected among the baccalaureate programme. Prior to the commencement of the study, ethical approval was obtained from the ethics committee (approval number UI/EC/21/0446). Consent was sought both verbally and in written form and nursing students who gave consent were given questionnaire. Instruction on how to fill the questionnaire was written in the beginning sections of the questionnaire and explanations were provided where necessary. The nursing students were approached directly during their free periods from Monday to Friday for the distribution of the questionnaire, and the complete questionnaires were collected afterwards. The researcher assigned a research assistant, who also assisted with the administration of questionnaires. In some occasions, students were allowed to return the questionnaires, not later than one day after it has been collected. The data collection spanned for three weeks.

Instrument for data collection

The instrument used for data collection is a self-developed questionnaire with the Cronbach’s alpha value of 0.93. The questionnaire was reviewed by expert in nursing diagnostic and it was adjudged of content validity. The questionnaire has three sections: Section A that elicited information concerning demographic data. Section B consists of commonly used diagnostic labels and factors that enhance formulation of accurate diagnostic labels. These diagnostic labels were extracted from NANDA-I Textbook (2018-2020). Section C consists of difficulties experienced by the selected students in the use of NANDA-I diagnostic labels. Section D consists of factors that enhance formulation of accurate diagnostic labels among students in the selected institutions.

Method of data analysis

Data were entered into spread sheet. Statistical package for social sciences, SPSS version 20.0 was used for data analysis. The data were analysed and presented using descriptive statistics such as frequency distribution table. While Chi-square was used to analyse association between variables. The chi-square p value was set at 0.05. In addition, those who agreed and strongly agreed with each difficulty were classified as experiencing high difficulty; those who were neutral about each difficulty were classified as experiencing moderate difficulty while those who disagreed and disagreed strongly were classified as experiencing low difficulty.

Inclusion criteria/exclusion criteria

Nursing students in the baccalaureate programme that were in 300, 400 and 500 level respectively were included in the study. Those in the diploma programme that were in year three only were involved in the study. While those who were sick and not available at the time of data collection were excluded from the study.

Results

Socio-demographic data

The socio-demographic characteristics of 120 sampled respondents. The distribution of age shows that majority 107 (89.2%) of the respondents fall between age 20-25 years. The mean age 23 ± 21.4 years, Majority 102 (85.0%) of the respondents are females (Table 1).

Variable	Frequency	Percentage (%)
Age		
<20years	5	4.2
20-25 years	107	89.2
>25 years	8	6.7
Gender		
Male	18	15
Female	102	85
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

Table 1: Socio-demographic details respondents (N=120).

Domain and classes of commonly made diagnostic labels

The frequently used diagnostic labels in NANDA-I. The most frequently used diagnostic label is deficient fluid volume (89.1%) in domain 2 (nutrition) and class 5 (hydration). In addition, the following are the most frequently used nursing diagnostic labels, Imbalanced nutrition less than body requirements (87.5%) in domain 2 (nutrition) and class 1 (ingestion), Impaired skin integrity (87.5%) in domain 11 (safety/protection) and class 2 (physical injury), Impaired physical mobility (86.7%) in domain (activity/rest) and class 2 (activity/exercise), Acute pain (85.9%) in domain 12 (comfort) and class 1 (Physical comfort), anxiety (85.9%) in domain 9 (coping/stress tolerance) and class 2 (coping responses), hyperthermia (85.1%) in domain 11 (safety/protection) and class 6 (Thermoregulation), ineffective breathing pattern (85%) in domain 4 (activity/rest) in class 4(cardiovascular/pulmonary responses) (Table 2).

Variable	Very Frequently	Frequently	Sometimes	Rarely	Never
	f (%)	f (%)	f (%)	f (%)	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: Coping/ stress tolerance					
Ineffective Coping	52 (43.3)	32 (26.7)	19 (15.8)	8 (6.7)	9 (7.5)
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 9: 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 10: 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 2: Distribution showing respondents' domain and classes of commonly made diagnostic labels (n=120).

Difficulties experienced in the use of Nanda-I diagnosis among nursing students

The difficulties experienced in the use of NANDA-I diagnosis among nursing students. From this table, the major difficulty experienced is the biennial changes of NANDA-I (78.3%). However, the top five difficulties experienced by the respondents are biennial changes of NANDA-I (78.3%), insufficient information on its use (71.7%), insufficient training in relation to specific pathologies (70.9%), poor accessibility to NANDA-I textbook due to its price (70.8%) and problem with identifying the domain and class of each diagnosis (68.3%) (Table 3).

Variable	SA	A	N	D	SD
	f (%)	f (%)	f (%)	f (%)	f (%)
Insufficient information on its use	30 (25)	56 (46.7)	14 (11.7)	18 (15)	2 (1.7)
Inability to determine nursing diagnoses appropriate to patients	26 (21.7)	54 (45)	13 (10.8)	23 (19.2)	4 (3.3)
Difficulty in verbal communication with Patients	17 (14.2)	47 (39.2)	19 (15.8)	32 (26.7)	5 (4.2)
Problem with putting each diagnosis into order of priority	28 (23.3)	54 (45)	13 (10.8)	19 (15.8)	6 (5)
Inability to cluster the signs and symptoms	22 (18.3)	51 (42.5)	20 (16.7)	23 (19.2)	4 (3.3)
Problem with identifying the domain and class of each diagnosis.	37 (30.8)	45 (37.5)	22 (18.3)	13 (10.8)	4 (2.5)
Biennial changes of NANDA-I	42 (35)	52 (43.3)	21 (17.5)	2 (1.7)	3 (2.5)
Poor accessibility to NANDA-I textbook due to its price.	55 (45.8)	30 (25)	15 (12.5)	14 (11.7)	6 (5)
Poor method of teaching	39 (32.5)	42 (35)	21 (17.5)	15 (12.5)	3 (2.5)
Inability to differentiate between medical and nursing diagnosis	25 (20.8)	29 (24.2)	24 (20)	27 (22.5)	15 (12.5)
Insufficient training in relation to specific pathologies	32 (26.7)	53 (44.2)	17 (14.2)	15 (12.5)	3 (2.5)

Table 3: Distribution showing difficulties experienced in the use of NANDA-I Diagnosis among respondents. (n=120).

Factors that can enhance the formulation of accurate diagnostic label among nursing students

The various factors that can enhance the formulation of accurate diagnostic labels among nursing students. From the table, majority 113 (94.2%) of the respondents agreed that increased exposure to clinical setting can enhance formulation of accurate diagnostic label. Also, majority 111 (92.5%) of them also agreed that use of case discussion method and group case studies (90.8%) as a method of teaching the use of NANDA-I can enhance the formulation of accurate diagnostic labels (Table 4).

Variable	Yes		No	
	Frequency	%	Frequency	%
Increased exposure to 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

Table 4: Distribution showing respondents' factors that can enhance the formulation of accurate diagnostic label among nursing students (n=120).

Bivariate analysis

There is no significant difference between the identified difficulties "insufficient information on its use" experienced in the use of NANDA-I among students' levels in the selected institutions with the p=0.168 (Table 5).

Variable	Insufficient information on its use (%)					
	High	Moderate	Low	x^2-value	Df	P-value
Level: 300	17	4	8	16.531a	12	0.168
Level: 400	19	3	3			
Level: 500	22	6	3			
Level: Year 3 (School of nursing)	28	1	6			

Table 5: Relationship between level and the identified difficulties "insufficient information on its use" experienced in the use of NANDA-I diagnosis.

There is statistically significant difference between the difficulties "inability to determine nursing diagnoses appropriate to patient" experienced in the use of NANDA-I among students in the selected institutions with the p=0.058 (Table 6).

Variable	Inability to determine nursing diagnoses appropriate to patient (%)					
	High	Moderate	Low	X^2-value	Df	P-value
University of Ibadan	52	13	20	0.674a	4	0.058
School of Nursing	28	0	7			

Table 6: Relationship between the difficulties experienced in the use of NANDA-I and selected schools.

Discussion

Socio-demographic information of respondents

The respondents to this study were mainly females than males which are as a result of the nature of the profession globally. This is similar to the study conducted in Nigeria where more than half of the respondents were between the ages of 20-25 with majority being single. This finding shows that nursing is a female domineering profession in Nigeria institutions.

Domains and classes of commonly used diagnostic labels among nursing students

The domains of the commonly used diagnostic labels highlighted above are domain 2 (Nutrition), domain 4 (Activity/rest), domain 9 (coping/stress tolerance), domain 11 (Safety/Protection) and domain 12 (comfort). From the findings in this study, domains 4 (Activity/Rest) and 11 (Safety/Protection) have the highest number of most frequently used diagnostic label with each domain having three diagnostic labels that are frequently used by the respondents. This contradicts the study conducted in Turkey which stated that the domain of the most frequently used diagnostic labels is domain 9 (Coping/stress). This could be due to the fact that on only first year students focusing on selected wards and disease condition while this present study was conducted on 300 level, 400 level, 500 level and year 3 students with no specific focus on any disease condition [16-19]. The class with the most frequently used diagnostic labels under domain 11 is class 2. Furthermore, the study revealed that majority of the respondents does not make use of the diagnostic labels in domain 7 (Role/Relationship). This is similar to the study conducted in Turkey. This similarity could be due to the fact that the students focused on the physical conditions rather than psychological conditions

The top ten commonly used diagnostic labels used according to this study are deficient 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 integrity [20]. Some of the frequently used diagnostic labels highlighted in this study are similar to the findings in the study conducted in Turkey to determine difficulties experienced by nursing students in using diagnoses of NANDA-I at care management. This similarity could be as a result of some general diagnostic labels that are common to almost all disease conditions. Furthermore, there is a contradiction in the top listed frequently used diagnosis in the study conducted and this present study. The top most frequently used diagnostic label as identified risk for infection while the top most frequently identified diagnosis in this present study is deficient fluid volume. This could be due to the difference in the settings being used as some disease conditions are more peculiar to certain geographical locations [21]. The most frequently used diagnostic label used in a study conducted in Turkey to determine the skill of second year students in defining nursing diagnoses was self-neglect which contradicts the findings of this study. This contradiction could be as a result of the difference in location of both studies. Some of the most frequently used diagnostic label in this study are similar to the findings in a study conducted in Turkey.

Difficulties experienced in the use of Nanda-I diagnosis among nursing students

The top five difficulties experienced in the use of NANDA-I among the respondents are biennial changes of NANDA-I, insufficient information on its use, insufficient training in relation to specific pathologies, poor accessibility to NANDA-I textbook due to its price and problem with identifying the domain and class of each diagnostic label [22]. The difficulties identified in this present study are similar to those identified in the study conducted on difficulties experienced by nursing students during the use of NANDA-I diagnoses in care management. One of the difficulties identified in this present study is also similar to the finding in a study conducted in Turkey to identify the difficulties encountered by nursing students in the development of nursing diagnostic skills.

However, the major difficulty identified by this study is biennial changes of NANDA-I which contradicts the major difficulty identified in Turkan's study in Turkey to evaluate the nursing care plan of first year nursing students. The major difficulty identified by his study was inability to arrange the nursing diagnoses in order of priority. The difference in findings could be as a result of the difference in the level of respondents used and respondents used in this present study [23]. One of the identified difficulties experienced by the respondents in this study is insufficient information on the use of NANDA-I this is consistent with the findings in Turkey. One of the reasons for insufficient information experienced by respondents in this present study could be as a result of not practicing it on the ward although they are being taught in classrooms. One major reason they would not practice it on the ward could be as a result of poor utilization of NANDA-I by nurses on the wards. This is due to excess workload, insufficient materials required to practice it.

Factors that can enhance formulation of accurate diagnostic label

In this study, a larger percentage of the respondents agreed that increased exposure to clinical settings will enhance formulation of accurate diagnostic labels. This is similar to the study conducted in Turkey. This will help them to put into practice what has been learnt in classrooms making it easier to formulate accurate diagnostic labels [24]. More than half of the respondents agreed that group care studies will enhance the formulation of accurate diagnostic labels which is similar to the study conducted in Turkey and Sweden, Brazil. More than half of the respondents also agreed that peer assessment will enhance the formulation of accurate diagnostic labels which is similar

to the study conducted in Turkey. There was no significant relationship between the levels and the identified difficulties experienced in the use of NANDA-I for diagnosis among by nursing students in the selected institutions. This contradicts the study conducted to determine nursing students' nursing diagnosis perception states where those in higher levels had more positive perception than those in lower levels which would also mean that the difficulties they experienced was also influenced by their levels. It can be inferred that the higher the level of the nursing student it does not translate to the ease use of NANDA-I.

Implication to nursing

The study having identified the difficulties experienced in the use of NANDA-I diagnosis among nursing students will make it easier to proffer solutions to these difficulties. This will lead to formation of accurate diagnosis and in turn, correct nursing intervention will be rendered. This will improve the quality of care given to patient leading to patient satisfaction, reduced hospitalization and in turn, reduced cost of health care and high quality of life.

This will help nurse educators to identify the difficulties their students experience in the use of NANDA-I and this will help them in planning how they can help to improve the use of NANDA-I because for solutions to be proffered, the difficulties first have to be identified which has been identified. It will also help to guide the teaching methods of nurse educators as they will know which methods work and which methods do not work.

This study can serve as bedrock for future research works. Researchers can work with this study by highlighting the difficulties identified and moving further in their research on how these difficulties can be solved.

Limitations of the study

The small sample sizes of this study might limit the generalization of the study. The instrument used for data collection was questionnaires. Despite these limitations, the study still provides relevant and useful information on difficulties experienced in the use of NANDA-I among nursing students in the baccalaureate and diplomate nursing students in developing countries in Africa.

The researcher suggests that, further studies should be carried out on how the identified factors can be used to solve the identified difficulties and how effective they will be in solving these difficulties. More sample participants should be involved to allow for more extensive responses.

Conclusion

This study reports the difficulties experienced in the use of NANDA-I diagnosis among nursing students in selected institutions in Nigeria. Overall responses indicate that domain 11 (Safety/Protection) and domain 4 (Activity/Rest) is the domain of the most commonly used diagnostic labels. The major difficulty experienced by nursing students in these institutions is biennial changes of NANDA-I. Majority of the students agreed that increased clinical exposure will enhance formulation of accurate diagnostic labels.

Recommendations

Based on the findings of this study, the researcher therefore recommends the following:

- There is a need for availability of sufficient information on the use of NANDA-I to nursing students.
- Nurses working in the hospitals should be trained on the use of NANDA-I as this will enable them to teach the nursing students the practicality of the use of NANDA-I on the ward after they must have been taught the theoretical aspect in the classroom.
- There should be increased exposure of the nursing students to the clinical settings because this will help them familiarize themselves with the various diagnoses of the patients as opposed to just having the theoretical knowledge.
- The use of peer assessment method and group care studies can also be employed as a method of teaching nursing students the use of NANDA-I diagnosis.

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