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Full Length Research Paper

Perception and Utilization of Standardized Nursing Languages among Nurses in south-south Nigeria

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Standardized nursing languages (SNLs) are crucial for nursing documentation, yet their usage varies and depends on several factors. This study aims to investigate the perception and other influences on SNL use among Nigerian nurses. A cross-sectional survey employing a questionnaire was utilized to survey 310 nurses from two Nigerian hospitals: The University of Calabar Teaching Hospital (UCTH) and General Hospital Calabar (GHC). Despite 92.58% of nurses having a positive perception (average score of 30.2 out of 40), the study revealed low SNL utilization (t = -50.01, df = 309; p < 0.05). Additionally, SNL perception and utilization showed no significant statistical relationship among nurses (N = 310, r = -0.07, p > 0.05). Barriers to SNL use included nurse-related factors (lack of time, p = 0.034; lack of mentor, p < 0.000) and institution-related factors (lack of material, p = 0.011; lack of SNL policies, p = 0.001; training, p = 0.105; sufficient staff, p = 0.001). Low SNL utilization, despite positive perception, stemmed from personal and institutional factors. Both parties should enhance SNL use by organizing seminars, formulating policies, introducing electronic documentation, participating in training and conferences, and seeking mentorship.

Key words: Perception standardized nursing language, utilization.

INTRODUCTION

Standardized nursing languages (SNLs), such as the North American Nursing Diagnosis Association (NANDA-I), Nursing Outcome Classification (NOC), and Nursing Intervention Classification (NIC) (NNN), are sets of terminologies created by nurses, understood by all nurses, and utilized to describe nursing care (Enebeli et al., 2023). SNLs are crucial for nursing and nursing documentation, as they enable consistent and accurate communication of assessments, interventions, and outcomes (Fennelly et al., 2021). Significant differences

exist when comparing the use of standardized languages like NANDA-I, NOC, and NIC to the use of traditional location or hospital-based jargon in documenting care. The use of location or hospital-based terms can result in variations in the quality and comprehensiveness of nursing care documentation, whereas SNLs prevent this. Without SNLs, nurses may lack the necessary knowledge and skills to interpret and apply relevant data, outcomes, and treatments for specific patient scenarios. The benefits of using SNLs in contemporary nursing practice

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and education are manifold, as they facilitate the planning, delivery, evaluation, and communication of nursing care to other nurses, healthcare providers, and healthcare consumers (Wahyuni et al., 2023). However, in Nigeria, the usage of SNLs in nursing care documentation ranges from poor (Sani and Sani, 2017) to average (Ajayi et al., 2015; Abiodun-Sanni, 2017), with NANDA-I being the most prevalent, while NOC and NIC are seldom used (Ajayi et al., 2015).

The adoption of standardized nursing languages (SNLs) in electronic health records (EHRs) has facilitated effective documentation of patient care in advanced countries like China, the UK, Japan, and the USA, as endorsed by the American Nurses Association (ANA) through 12 standardized terms (Chae et al., 2020). However, in Nigeria, where many hospitals rely on paper documentation, the utilization of SNLs faces significant challenges (Ojo and Olaogun, 2023). Nurses in Nigeria require comprehensive knowledge of diagnostic labels. outcomes, and intervention classifications to use SNLs effectively in paper-based documentation, along with access to reference materials and sufficient time for documentation, which are often lacking. Consequently, poor utilization of SNLs among Nigerian nurses hampers and consistency auality of nursing documentation, denying them access to a wealth of information on locally and globally effective interventions communicated through SNLs. This reliance on outdated practice guidelines or solely on physician prescriptions may impede optimal patient care.

The theory of planned behavior, a psychological framework aimed at predicting and explaining an individual's intention to engage in a specific behavior. posits that intention is influenced by three factors: attitudes, subjective norms, and perceived behavioral control (Bošnjak et al., 2020). Perceived behavioral control refers to an individual's belief in their ability and resources to perform the behavior. In the context of this study, the willingness to adopt a new tool, such as standardized nursing language (SNL), is largely dependent on the individual's positive perceptions toward it. However, previous research has indicated that Nigerian nurses generally have a positive perception of SNL but do not consistently use it in their practice (Olatubi et al., 2018; Sani and Sani, 2017). This disconnects between perception and utilization contradicts the theoretical framework outlined in the theory of planned behavior. Therefore, this study aims to explore the perception and other factors influencing the use of SNLs among Nigerian nurses.

Objectives

- 1) To examine nurses' perception of the use of SNLs in the documentation of patient care.
- 2) To assess the level of utilization of SNLs among nurses for the documentation of patients' care.

3) To investigate predictors of utilization of SNLs among nurses.

METHODS

Study design and setting

This study utilized a cross-sectional survey methodology to investigate the interrelationship between perception and factors influencing the utilization of Standardized Nursing Languages (SNLs) among nurses in Cross River State, Nigeria. Situated in the Niger Delta region, Cross River State covers an area of 20,156 square km and derives its name from the Cross River, which flows through the state. The capital city, Calabar, was selected as the research site due to its hosting of two prominent hospitals: the University of Calabar Teaching Hospital (UCTH) and General Hospital Calabar (GHC). These hospitals were chosen for their significant employment of nursing staff, representing a substantial portion of the nursing workforce in the state.

Study population

The research population comprises nurses employed in Cross River State. Specifically, the sample includes nurses from two selected hospitals: the University of Calabar Teaching Hospital, with a nursing staff complement of 509 across 12 units, and General Hospital Calabar, with 151 nurses distributed across eight units at the time of data collection.

Sample size determination

Sample size determination was based on the methodology outlined by Krejcie and Morgan (1970). Utilizing this approach, a sample size of three hundred fifty-eight nurses was deemed appropriate for the quantitative phase of the study. For UCTH, N = 509 nurses; sample size (S) is = 217; accounting for 10% attrition; S = 239; while for GHC, N = 151 nurse; sample size (S) is = 108; accounting for 10% attrition; S = 119.

Sampling procedure

A stratified sampling technique with proportionate allocation was employed in this study. Nurses working at UCTH Calabar and GHC were stratified based on their unit and rank within the unit. Subsequently, a list of nurses in each stratum was compiled, and random numbers from Table 1 were used to select nurses proportionally to achieve the desired sample size.

Instrument for data collection

Data were collected using a structured, self-explanatory questionnaire developed by the researchers.

Validity and reliability of the instrument

Content validity was ensured by constructing the instrument to reflect the variables under investigation, with each item aligned with the specific objectives. Additionally, the developed tool underwent assessment, modification, and approval by an experienced research guide and other experts in test and measurement to ensure face validity. The reliability of the study instrument was assessed through

Table 1. Socio-demographic data of the respondents.

Variable		UCTH (%) n=213	GHC (%) n=97
Gender	Male	1.9	4.1
Gender	Female	98.1	95.9
	Single	13.6	17.5
Marital status	Married	81.2	74.2
Mantai Status	Divorced	2.3	3.1
	Widowed	2.8	5.2
	21-30	14.6	16.5
	31-40	38.0	28.9
A == (,,====)	41-50	31.9	39.2
Age (years)	51-60	15.5	15.5
	1-7	16.9	8.2
	8-14	27.2	16.5
	15-21	31.9	35.1
V	22-28	16.9	29.9
Years of experience	29-35	7.0	10.3
	SSCE	25.4	56.7
	HND	14.1	19.6
	B.Sc.	53.5	22.7
	PGD	4.7	1.0
Educational attainment	M.Sc.	2.3	0.0
	PhD	0.0	0.0
	NO II	3.8	2.1
	NO I	7.0	3.1
	SNO	21.6	18.6
	PNO	13.6	17.5
	ACNO	21.1	20.6
Professional rank	CNO	23.9	33.0
	ADNS	6.6	5.1
	DDNS	2.3	0.0
	Total	100	100

a test-retest method, where 35 copies of the questionnaire were administered to nurses at the University of Uyo Teaching Hospital, Uyo. The same set of questionnaires was re-administered to the same respondents after two weeks, and the correlation between the two tests was computed using Pearson's Product Moment Correlation Coefficient, resulting in section-dependent results ranging from 0.73 to 0.91.

Method of data analysis

Scores were assigned to the Likert scale on perception as follows; 4-strongly agree; 3-Agree; 2-disagree; and 1-strongly disagree, the sum of the scores was calculated, and scores of 10-25 signified positive, and 26-40 signified a negative perception. Data were entered into the SPSS version 25 for Windows (licence key: BzR10B2xXq-p30I2UmsXF-JgHII0pd4) and analysed using descriptive statistics including simple percentages, graphs, and tables. Utilization was measured using a Likert scale and ranked as follows; 4-always, 3- often, 2- rarely, and 1- never. Statistical

analyses included Pearson Product Moment Correlation, sample T-test, and binary logistic regression.

Ethical consideration

Ethical approval to conduct the study was obtained from the Research and Ethics Committee of UCTH, Calabar (Approval No: UCTH/HREC/33/688). Participants were recruited voluntarily, with assurances of privacy, data protection, and the freedom to withdraw from the study at any point.

RESULTS

Socio-demographics

Table 1 presents the socio-demographic data of the

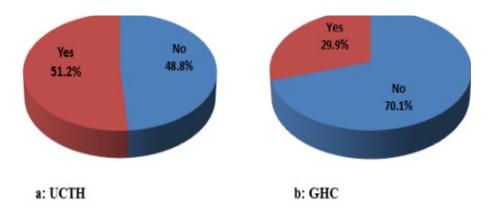


Figure 1. Percentage of the respondent that has used SNLs.

Table 2. The utilisation of NANDA-I, NOC and NIC.

Utilisation	Frequency	Percentage
Utilisation of NANDA-I		
Yes	138	44.52
No	172	55.48
Utilisation of NOC		
Yes	18	5.81
No	292	94.19
Utilisation of NIC		
Yes	28	09.03
No	282	90.97
Total	310	100

respondents from two hospitals: UCTH and GHC. The majority of respondents were females (98.1% in UCTH; 95.9% in GHC) and married (81.2% in UCTH; 74.2% in GHC). There was variation in the educational level of the respondents between the two study groups, with over half of the respondents in UCTH (53.5%) holding a bachelor's degree, while in GHC, the majority (56.7%) had completed only SSCE. Respondents in GHC also had lower rates of higher education, such as Higher National Diploma (19.6%), Post Graduate Diploma (1%), and Master's or Doctorate (0%).

Utilization of standardized nursing language

Figure 1 illustrates the one-month record of SNL usage among respondents from two hospitals. The figure comprises two stacked bar charts, one for each hospital, displaying the percentage usage of SNLs. In UCTH, 51.2% of the respondents used SNLs, while 48.8% did not; meanwhile, in GHC, 70.1% did not utilize them. Table 2 shows that 44.52% (138) of the respondents

have utilized NANDA-I, while only 5.81% (18) and 9.03% (28) of the total respondents have utilized NOC and NIC.

Level of the utilization of SNLs

A one-sample t-test analysis conducted at a significance level of 0.05 revealed that SNL utilization was low (mean score = 3.92, standard deviation = 1.26) compared to the reference mean of 7.5, which represents the midpoint between the three rating scales of frequency of using NANDA, NIC, and NOC on a Likert-like scale of 1 to 4 (midpoint = 2.5 x 3). The result suggests that SNL utilization among nurses was significantly low (t = -50.01, df = 309, p < 0.05). Table 3 shows the student t-test analysis for utilization of SNLs.

Perception of standardized nursing languages

Table 4 demonstrates that most respondents agreed or strongly agreed with positively worded items, while

Table 3. Student t-test analysis for utilization of SNLs.

Variable	$\frac{-}{x}$	SD	Mean difference	t-value	p-level
The utilization of standardized nursing languages	3.92	1.26	3.58	-50.01	0.000

 $\mu = 7.5$.

Table 4. Respondent's perception of standardized nursing languages.

S/N		SA(%)	A(%)	D(%)	SD(%)
1	Using standardized nursing languages in the nursing process is unnecessary**	7.1	7.8	49.7	35.4
2	The utilization of standardized nursing languages helps nurses deliver quality nursing care	37.2	46.9	7.4	8.4
3	The standardized nursing languages make nurses creative in solving patients' problems	40.0	35.3	12.7	12.0
4	Standardized nursing languages give professional identification to nurses	41.1	38.8	11.4	8.7
5	The use of standardized nursing languages makes the nursing process difficult**	9.1	13.8	36.2	40.9
6	Keeping track of updates on the standardized nursing languages is stressful**	14.6	12.3	39.2	33.9
7	Standardized nursing languages provide nurses with an extensive number of diagnoses, outcomes, and interventions	36.1	45.0	9.3	9.6
8	Utilizing standardized nursing languages enables nurses to adhere to the standard of care	39.1	32.4	15.4	13.0
9	Utilizing standardized nursing languages improves patient care	44.6	31.0	16.2	8.3
10	Standardized nursing languages are for nurses abroad and not Nigerian nurses **	20.7	28.2	24.6	26.6

^{**}Inversely coded Items.

inversely coded items received more disagreement. The Likert scale on perception was assigned scores as follows: 4 for strongly agree, 3 for agree, 2 for disagree, and 1 for strongly disagree. The mean of the scores was calculated and graded as follows: 10 - 25 for negative perceptions and 26 - 40 for positive perceptions. Table 5 shows that 7.42% (23) of respondents held negative perceptions of SNLs, while 92.58% (287) had positive perceptions. The average score of the respondents' perception was 30.2, indicating overall positive perceptions.

Relationship between perception and utilization of SNL

A Pearson product-moment correlation coefficient test was conducted to examine the relationship between the perception of SNLs and their utilization. The result indicates no statistically significant relationship between the perception of SNLs and the utilization of SNLs, with r (N=310) = -0.07, p > 0.05 (Table 6).

Barriers to the use of SNLs

Figure 2 illustrates reasons for inadequate SNL utilization, with 84.2% (261) of respondents citing paper documentation as a barrier, followed by 56.8% (176) identifying a shortage of nurses in their wards. Additionally, 68.7% (213) reported insufficient time to care

for patients, 76.5% (237) noted the absence of SNL usage policies in their wards/hospitals, and 67.1% (208) cited the lack of reference materials as a barrier. A binary logistic regression revealed that experience, shortage of nurses, lack of reference materials, lack of mentors, lack of time, and lack of SNL usage policies were predictors of SNL utilization (p < 0.05). However, training on SNLs, paper documentation, age, educational attainment, years of experience, professional rank, and additional training on SNLs did not impact SNL utilization. Table 7 shows the binary logistic analysis of predictors of the utilization of SNLs.

DISCUSSION

The statistical analysis revealed that the utilization of SNLs was significantly low (p < 0.05). Specifically, 51.2% (109) of respondents at UCTH utilized SNLs, categorized as fair, while only 29.9% (29) at GHC utilized SNLs, categorized as poor. This trend aligns with Sani and Sani's (2017) study, which similarly reported poor utilization of standardized nursing language, and exhibits some similarity to the findings of Olatubi et al. (2018) and Ajayi et al. (2015), both reporting fair utilization of SNLs. All respondents who have utilized SNL reported using NANDA-I. However, in the case of NOC and NIC, only 16.51% (35) of the respondents reported that they used NOC, and 25.69% (57) used NIC in UCTH. While in GHC, none of the respondents had used NOC and NIC. This indicates that 44.52% (138) of the overall

Table 5. Respondents' perception of SNLs.

Perception on SNLs	Score	Frequency	Percentage	Average score
Negative	10-25	23	7.42	20.2
Positive	26-40	287	92.58	30.2
Total		310	100	

 Table 6. Relationship between perception of SNLs and the utilization of SNLs.

Correlations		Utilization of SNLs
	Pearson correlation	-0.070
Perception of SNLs	Sig. (2-tailed)	0.219
	N	310

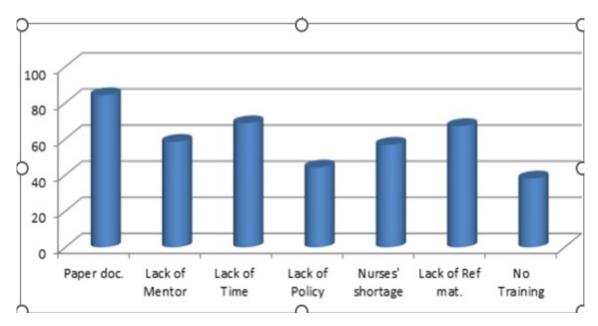


Figure 2. Barriers to the use of SNLs.

Table 7. Binary logistic analysis of predictors of the utilization of SNLs.

Barriers to the use of SNLs	В	S.E.	Wald	Df	Sig.	Exp(B)
Nurses' shortage	1.267	0.388	10.648	1	0.001	3.550
Lack of time	0.321	0.410	8.612	1	0.034	0.726
No policy on SNL use	0.960	0.289	11.078	1	0.001	2.613
Lack of training on SNLs	0.451	0.278	2.625	1	0.105	1.570
Use of Paper documentation	-0.031	0.371	0.007	1	0.934	0.469
Lack of mentors	1.592	0.413	14.854	1	0.000	4.815
Lack of reference material	0.474	0.185	6.528	1	0.011	1.606
Age	-0.059	0.327	0.032	1	0.858	0.943
Years of experience	-0.910	0.450	4.079	1	0.043	0.403
Highest level of Education	0.111	0.234	0.224	1	0.636	1.117
Professional rank	0.596	0.408	2.135	1	0.144	1.815

respondents utilized NANDA in the past month, whereas only 5.81% (18) and 9.03% (28) of the total respondents utilized NOC and NIC, respectively. These statistics underscore a notably poor utilization of NIC and NOC. This is similar to the findings in the study by Ajayi et al., (2015), where respondents had adequate levels of utilization of NANDA-I, while most of them were not using NIC and NOC in nursing documentation. The lower rate of utilization of NIC and NOC compared to NANDA-I can be attributed to the familiarity and comfort level that Nigerian nurses have developed with NANDA-I over time. NANDA-I has been widely used in Nigeria for a longer duration, allowing nurses to become more accustomed to its terminology and application in nursing practice. In contrast, NIC and NOC may be relatively newer concepts or less emphasized in nursing education and practice in Nigeria, resulting in lower familiarity and confidence among nurses.

This observation underscores the importance of providing additional training and education on NOC and NIC for Nigerian nurses. By enhancing their knowledge and understanding of these standardized nursing languages, nurses can broaden their repertoire of assessment, intervention, and outcome terminology, thereby improving the comprehensiveness and accuracy of nursing documentation and care delivery. Increased training and education initiatives focused on NOC and NIC can empower nurses to effectively incorporate these languages into their practice, ultimately enhancing the quality of patient care and outcomes.

The perception scores of the respondents were 3.00 for UCTH and 3.05 for GHC, which indicated a positive perception of SNLs. This finding is consistent with previous studies that reported positive attitudes and beliefs of Nigerian nurses towards SNLs (Sani and Sani, 2017; Ojo et al., 2020). A positive perception according to the theory of planned behavior should lead to high utilization of SNLs. However, this was not the case in this study, as there was no statistically significant relationship between the perception and the utilization of SNLs. This may be due to the presence of other factors that affect the use of SNLs, such as the availability of resources, time constraints, institutional policies, and professional norms.

The results also identified factors that affect the utilization of standardized nursing languages (SNLs) by nurses in two hospitals: UCTH and GHC. These factors can be classified into two categories: nurse-related and institution-related. Nurse-related factors include years of experience, lack of time, and lack of a mentor, all of which were found to have a significant impact on the use of SNLs. However, the nurse's educational attainment and professional rank were not significantly related to the use of SNLs. Institution-related factors include a shortage of nurses, lack of reference materials, lack of training, and lack of policy on SNL use, all of which were also found to have a significant influence on the use of SNLs. Paper documentation was another factor reported by

respondents, but it was not significant. These findings are in line with previous studies that reported similar barriers to the use of SNLs by nurses (Ajayi et al., 2015).

The majority of barriers to the use of SNLs are institution-related, implying that the responsibility to enhance SNL utilization primarily rests on the institution. However, nurses also play a crucial role. Organizing additional seminars on SNLs, implementing policies integrating aovernina their use, and electronic documentation can significantly enhance SNL utilization, tasks primarily incumbent upon the institution. Furthermore, conducting more seminars and increasing nurse staffing levels can enhance nurses' knowledge and afford them time to utilize SNLs effectively. Nonetheless, it remains the responsibility of nurses to attend seminars and conferences to expand their knowledge base.

Study limitation

This study was conducted in a tertiary and a secondary healthcare facility; caution should be exercised when generalizing the results to primary facilities.

Conclusion

This study examined how nurses perceived and utilized standardized nursing languages (SNLs) at two hospitals: UCTH and GHC. The findings revealed that respondents used SNLs infrequently, despite having a positive view of them. This contradicts the theory of planned behavior, which suggests that a positive perception leads to increased utilization. Furthermore, the findings indicated numerous obstacles to SNL utilization, encompassing both factors related to nurses and those tied to institutional practices. Nurse-related barriers included a lack of time, while institution-related barriers included a lack of materials, policies, training, and staff.

Institutional barriers appeared to outweigh those related to nurses, implying that institutions bear greater responsibility and opportunity for enhancing SNL usage. However, nurses also have a role to play in enhancing their knowledge and skills on SNLs.

Recommendations

- 1) To improve patient care and enhance professional autonomy, all practising nurses should use standardized nursing languages (SNLs) in the care of patients. This can be achieved by providing regular training and education on SNLs, and by monitoring and evaluating the outcomes of SNL use.
- 2) To increase the knowledge and skills of nurses on SNLs, nurses who are experts in SNLs should mentor and coach their colleagues who are not proficient in SNLs. This can be done by creating a formal mentorship

program, or by facilitating informal peer learning and feedback sessions.

- 3) To ensure the consistent and effective use of SNLs, the hospital should create and enforce a policy on SNL use. The policy should specify the standards, procedures, and expectations for SNL use, and provide incentives and sanctions for compliance and non-compliance.
- 4) To reduce the workload and stress of nurses, and to enable them to provide evidence-based care using SNLs, the hospital management should employ more nurses. The optimal nurse-to-patient ratio should be determined based on the needs and resources of the hospital, and the impact of staffing levels on SNL use and patient outcomes should be assessed.
- 5) To facilitate the documentation and communication of SNLs, the hospital should provide enough materials for paper documentation, and upgrade to electronic documentation if possible. Electronic documentation can offer many advantages over paper documentation, such as improved accuracy, accessibility, and efficiency of SNL use.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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