Association between type of school, level of study and learning preferences of Nursing students in Schools of Nursing in Anambra state

Abstract

Learning preference in this study is the way student nurses in Anambra State Schools of Nursing prefer to learn with their sensory modalities. Visual is preference for graphic information, Aural is for information that is heard, Read/Write preference refers to information that is displayed as words while Kineasthetic preference is linked to the use of experience or practice. These preferences are important in the learning of the students. The study assessed the association between type of school, level of study and learning preferences among nursing students in Schools of Nursing in Anambra state. Descriptive cross-sectional survey design was adopted for the study. There were 342 respondents selected by Random Sampling Technique. Instrument used for online data collection was Visual, Aural, Read/Write, Kineasthetic questionnaire version 8.01 and the researcher's demographic questionnaire. The respondents filled the questionnaire online based on their levels of study. Data were analyzed using Visual, Aural, Read/Write, Kineasthetic standard algorithm, Statistical Package for the Social Sciences version 25. Descriptive statistics was presented in frequency tables and percentages. Chi-square was used to test the hypotheses at p-value < 0.05 significance level. Findings showed that type of school had significant association $\chi 2=37.95$; $p<0.001$with learning preferences of the students while level of study had no significant association $\chi 2=7.33$; $p=0.12$ with their learning preferences. Assessing the learning preferences of the students is therefore, an input of great value in nursing education. The knowledge may help educators to plan teaching methods based on learning preferences; the use of varied teaching methods that address different learning preferences of the students would optimize learning and improve their academic performance. Preparation of Nursing Curriculum that utilizes more active strategies to accommodate the diverse learning preferences of the students in their different levels of study is recommended.

Key words: Nursing students, type of school, level of study, association and Learning Preferences.

INTRODUCTION

Meeting the ever-changing needs of the nursing profession calls for a radical step. Van Der Wege and Keil (2020); AlMezeni and Almaskari (2021) noted the fact that traditional nursing education cannot accommodate the variations in the new patterns of diseases, the fast growth of the aging population and the internalization of nursing education. There is therefore, a shift from the traditional teacher-centered approach to the modern learner-centered approach. Since one of the principal key aims of nursing education according to Kaya et al. (2017) and Kaddoura et al. (2017) is to promote

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nursing students' critical thinking. It is therefore, important for nursing education to develop appropriate curriculum and adopt effective instructional strategies that are new and innovative but this will be proceeded by assessment of the learning preferences of the students.

Assessment of the learning preferences of nursing students can facilitate proper development of lesson plans based on their preferred learning methods. It can, to a large extent, increase their understanding of the subject matter as well as assist in determining appropriate faculty instructional strategies related to the learning preferences of the students. In the same way, knowing their learning preferences can assist in designing appropriate nursing curriculum that would promote lifelong learning characterized by proper understanding and internalization of learning materials, confidence and competence (AlMezeni and Almaskari, 2021).

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AIM OF STUDY

The aim of this work was to ascertain the association between type of school (Government and Private), level of study and learning preferences among nursing students in school of nursing in Anambra State.

RESEARCH QUESTIONS

- What is the association between type of school (Government or Private) and learning preferences of nursing students in Schools of Nursing in Anambra State?
- What is the association between level of study and learning preferences of nursing students in Schools of Nursing in Anambra State?

Research Design

A descriptive cross-sectional research design was adopted for this study to assess Association between age group, gender and learning preferences among nursing students in school of nursing in Anambra State. This design is appropriate because descriptive studies explains characteristics that exist in a group at a given point in time and make inferences about their possible relationships (Cherry 2019). This method was chosen for the study because it provides valuable information from the population with reference to the characteristics, frequency and relationship between variables that exist in the Association between age group, gender and learning preferences among nursing students in school of nursing in Anambra State.

Area of the Study

The study was conducted in Anambra State which is one of the thirty-six States in Nigeria, located at the south-east geopolitical zone of Nigeria with Awka being its capital. There are seven Schools of Nursing (SON) in Anambra State of which two are Government institutions and five are Private institutions. Nnamdi Azikiwe University Teaching Hospital, Nnewi (NAUTH) and School of Nursing, Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Nkpor (COOUTH) are Government Schools of Nursing. The Private Schools of Nursing include: College of Nursing, Our Lady of Lourdes Hospital, Ihiala; School of Nursing, Iyienu Hospital, Ogidi; School of Nursing, St. Charles Borromeo Hospital, Onitsha; College of Nursing, Amichi; and College of Nursing, St. Joseph's Hospital, Adazi. All these schools are within a distance of 30-40km from each other.

Ethical consideration

A letter for Ethical clearance was written and approval was obtained from the Human Research and Ethics Committee of Nnamdi Azikiwe University, Faculty of Health Sciences. Copyright permission was obtained from the developer of the standardized

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instrument. Informed consent was obtained from the participants and confidentiality of information was ensured.

Population of the Study

Table 1 Population of Schools of Nursing

S/N	Name of School and Level of study	Population
1	SON, NAUTH	
	100 Level	104
	200 Level	62
	300 Level	77
2	SON, COOUTH	
	100 Level	50
	200 Level	59
	300 Level	51
3	SON, IYI-ENU	
	100 Level	120
	200 Level	58
	300 Level	50
4	SON, IHIALA	
	100 Level	88
	200 Level	120
	300 Level	89
5	SON, ST. CHARLES BORROMEO	
	100 Level	100
	200 Level	60
	300 Level	51
6	CON, AMICHI	
	100 Level	98
	200 Level	77
	300 Level	45
7	CON, ADAZI	
	100 Level	41
	200 Level	69
	300 Level	50
	TOTAL	**1519**

Source: Schools' nominal roll April, 2021

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Sample and Sampling Technique(s)

The sample size was determined using Taro Yemane's formula

$$n = \frac{N}{1 + N\,(e)^2}$$

Where
n = Sample size
N = Total population
e = Error of sample or level of significance - 0.05
1 = Unit (A constant)
n = $1519/1+1519\ (0.05)^2$
= 1519/ 1+1519 (0.0025)
= 1519/1+ 3.7975
= 1519/ 4.7975
= 316.62
= 317
The sample size was 317 but to make up for attrition and exigencies, the researcher added 10% of 317 which is 32. Sample size was therefore 317+32=349.

The sampling technique

Multi Stage Sampling Technique was used to select the participants.

Stage 1: The Schools were clustered into two: Government Schools of Nursing and Private Schools of Nursing.

Table 2 Government Schools of Nursing and Private Schools of Nursing

Government Schools of Nursing	**Private Schools of Nursing**
SON NAUTH Nnewi	SON Ihiala
SON COOUTH Nkpor	SON Iyienu
	SON St. Charles Borromeo
	College of Nursing Amichi
	College of Nursing Adazi

Stage 2: The two Government schools were selected using census method.

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Stage 3: Simple Random Sampling Balloting Technique was used to select two Schools (College of Nursing, Adazi and College of Nursing, Amichi) from the sample frame of Private Schools.

Stage 4: Proportionate Sampling Technique was used to determine the number of participants to be selected from each of the four Schools as well as from the different levels of study in each School.

This was determined with the formula: P = X/N

Where X = Number of successes

N = Size of the sample in question

Stage 5: Simple Random Sampling Balloting Technique with replacement was used to select participants from each level of study.

Table 3 Distribution of Participants in the selected Schools

S/N	Name of School and Level of study	Population of Participants in the selected Schools	Sample of the Participants to be selected from the Schools
1	SON, NAUTH		
	100 Level	104	47
	200 Level	62	28
	300 Level	77	34
2	SON, COOUTH		
	100 Level	50	22
	200 Level	59	26
	300 Level	51	23
3	CON, AMICHI		
	100 Level	98	44
	200 Level	77	34
	300 Level	45	20
4	CON, ADAZI		
	100 Level	41	18
	200 Level	69	31
	300 Level	50	22
	TOTAL	**783**	**349**

Inclusion Criteria

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a. Availability of the students at the time of data collection.

b. Willingness of the students to participate in the study.

Instrument for Data Collection

An adapted VARK standardized questionnaire version 8.01 alongside a questionnaire of demographic information were used to collect data from the participants. The questionnaire consisted of 20 items which answered the research questions in the study. The items were grouped into A and B sections. Section A, designed by the researcher, consisted of 4 items aimed at eliciting the demographic characteristics of the participants such as type of school and level of study. Section B, developed by Neil Fleming (author of the instrument), did consist of 16 questions aimed at assessing the learning preferences (Visual, Aural, Read/write and Kinaesthetic) of the participants. Each question had four options (A to D); each option represented one category of learning preference: V-Visual, A-Aural, R-Read/write, K-Kinaesthetic. Each respondent could select one or more options and the scoring chart used to ascertain the learning preference of the participant. Therefore, every participant could acquire a minimum of zero score in each preference; the selection of one option indicated that the student had uni-modal preference while the selection of two or more options of almost equal scores, indicated multi-modal preference.

Method of Data Collection

Data was collected using a questionnaire of demographic information including School (Government or Private) and Level of Study. The developer of the instrument, Neil Fleming, set up VARK subscription site for the researcher and created a web address for online filling of the VARK questionnaire by the participants; also sent the administration web address for the researcher to access the results of the participants. A hyperlink to the questionnaire was created by the researcher for the participants to aid

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easy access to the website. The researcher obtained a letter of introduction from the Head of the Department of Nursing Sciences with which she visited the selected Schools of Nursing within one week to obtain permission from the Heads of Schools to embark on the study; different days were fixed for the researcher to return to the schools for data collection. The researcher had a trained assistant who assisted in the process of data collection. The assistant was given a day training on the research topic, concept of learning preferences, selected schools for the study, instrument for data collection and method of data collection.

On scheduled days, the students were made available in the classrooms of their respective schools, 'Yes' and 'No' were written on pieces of paper, put in a bag and shuffled thoroughly; each student was allowed to pick. Those who picked 'yes' were allowed to participate in the study while those who picked 'No' were not allowed to participate in the study. Those who picked 'Yes' but declined to participate were replaced until the needed number of participants was gotten. Selected participants were instructed accordingly in their various schools and informed consent was obtained from them. Each participant was given a code to avoid non participants' access to the website. The hyperlink was made available to them; a smart phone and internet access were provided to aid easy access to the link. The participants filled the VARK questionnaire online based on their levels of study and submitted immediately; collection of data lasted for two months. A total of 342 questionnaires were properly filled and submitted, thus the return rate of the questionnaires was 98.3%.

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METHOD OF DATA ANALYSIS

Analysis of the data was done using SPSS package version 25; results in the subscription system were automatically analyzed using VARK standard algorithm. Descriptive statistics were presented in frequency tables and percentages and used to measure the objectives.

RESULTS

Demographic Data

Table 4 Demographic Characteristics of Nursing Students n = 342

Characteristics	Frequency	Percentages (%)
School		
NAUTH	105	50.3
COOUTH	70	35.7
Amichi	96	11.7
Adazi	71	2.3
Level of study		
100 Level	129	37.7
200 Level	116	33.9
300 Level	97	28.4

Table 4 showed the demographic characteristics of Nursing Students. According to the school, NAUTH had more participants followed by Amichi then Adazi and COOUTH. The table further shows that 100 Level students participated more in the study.

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Table 5 Chi square test of association between Type of School, Level of Study and Learning preferences of Nursing Students in Schools of Nursing in Anambra State.

Variables	**Frequency (%)**					**Total (%)**	**χ2 (*p-value*)**	
	Multi-modal	**Uni-modal**						
		Visual	**Aural**	**Read/ Write**	**Kinaes-thetic**			
Type of School								
Government	61 (34.9)	26 (14.9)	36 (20.6)	22 (12.6)	30 (17.1)	175 (100)	7.33;	
Private	73 (43.7)	19 (11.4)	31 (18.6)	28 (16.8)	16 (9.6)	167 (100)	$p=0.12^{NS}$	
Level of Study								
100	69 (53.5)	5 (3.9)	22 (17.1)	17 (13.2)	16 (12.4)	129 (100)	82.91;	
200	39 (33.6)	33 (28.4)	7 (6.0)	25 (21.6)	12 (10.3)	116 (100)	*p=0.00**	
300	26 (26.8)	7 (7.2)	38 (39.2)	8 (8.2)	18 (18.6)	97 (100)		

Table 5 showed that Many students in both Government and Private Schools had greater preference for multi-modal learning. Many students in both Government and Private Schools had greater preference for multi-modal learning. The students in both types of school, made use of all the sensory modalities (V, A, R, K) in learning; their uni-modal preference being Aural. The least learning preference for students in Government School was Read/write and Kinaesthetic for those in Private School.

Data was analyzed using Chi-square and values were significant at $p<0.05$.

The result showed that there was no significant association ($\chi 2=7.33$; $p=0.12$) between Type of School (Government and Private) and the learning preferences of nursing students in Schools of Nursing in Anambra State.

The students in all levels employed all sensory modalities in learning. More than half of the total population of the students in 100 level had greater preference for multi-modal learning, same with those in 200 level but their uni-modal preference differed. While majority of the students in 100 level preferred Aural and only very few students

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preferred Visual, the reverse was the case for those in 200 level where preference for Visual learning was higher than Aural. The students in 300 level had greater uni-modal learning preference with Aural being preferred by majority, followed by multi-modal learning, the least preference was for Visual .

Data was analyzed using Chi-square and values were significant at $p<0.05$.

The result showed significant association ($\chi 2=82.91$; $p<0.001$) between level of study and the learning preferences of nursing students in Schools of Nursing in Anambra State.

Discussion

Type of School and Learning Preference:

Finding from this study as shown in Table 4 showed that students from Government and Private Schools had an even spread of multi-modal and uni-modal learning preferences; there was no difference in their learning preferences. Chi-square test of association done revealed that there was no significant association $p>0.05$ between Type of School (Government and Private) and the learning preferences of nursing students in Schools of Nursing in Anambra State. This even spread in the learning preferences of students in both Government and Private Schools was not surprising. It may be due to the fact that same courses are taught in nursing schools; courses taught are not dependent on the type of School.

This result of non-significant association between Type of School (Government and Private) and the learning preferences of nursing students is in accord with the study carried out in South Africa by Mpwanya and Dockrat (2021) on 429 undergraduate logistics students where type of school (Government and Private) did not significantly relate with learning preferences of the students. The finding is consistent with that of

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Ortega-Torres et al. (2021) on 528 Spanish students that revealed that there was no significant difference between type of School (Government and Private) and the learning preferences of the students.

Level of Study and Learning Preference:

Learning preferences were analyzed between three levels (L) of study (100 L 200 L, 300 L). Result from Table 5 showed that 100 L and 200 L students were more multi-modal in their learning preferences than 300 L. Multi-modal preference diminished with progression in the level of study.

For the uni-modal learners, Aural was the most preferred learning preference for the students in 100 L while the least preferred was Visual. The reverse was however, the situation for the students in 200 L; Visual became their most preferred learning preference while Aural became the least preferred. 300 L students were more uni-modal than multi-modal in their learning preferences; their uni-modal preference was same with those in 100 L though higher. Aural. These variations were expected and may be attributed to variation in the type of training, course content as well as teaching methods at each level of study.

Chi- square test of association done as shown in Table 5 revealed that there was a significant association $p<0.05$ between level of study and the learning preferences of nursing students in Schools of Nursing in Anambra State. This was expected.

Finding from this study confirmed the findings of Rezigalla and Ahmed (2019) that reported the presence of uni-modal preference with different percentages in all the levels of study and a shift from multi-modal to uni-modal learning preference as the students progressed in their levels of study. It is consistent with the findings of

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Chaudhry et al. (2020) where majority of first year and fourth year dental students preferred muti-modal learning whereas majority of second- and third-year students had uni-modal preference for Visual learning but house officers had Kinaesthetic preference. The result is also in line with that of Gayathiri et al., (2019) that reported a significant association between visual learning preference and level of study and strengthened the findings of Aldosari et al. (2018) where there was significant association between learning preferences and level of study. Conversely, Hornamand et al. (2021), Gabal and Hussein (2020), Nja et al. (2019), Akhlaghi et al. (2018), Asiry (2016) identified a non significant association between level of study and learning preferences. Difference in the demographic characteristics of the participants in the study may account for this variation.

CONCLUSION

There was no significant association between type of school (Government and Private) and the learning preferences of nursing students in Schools of nursing in Anambra State but there was a significant association between level of study and their learning preferences.

IMPLICATIONS OF THE FINDINGS

1. Assessment of the learning preferences of the students could be an input of great value in nursing education. The knowledge may help educators to plan teaching methods based on learning preferences as well as identify and solve learning problems among students, thus enhance effective learning in them.
2. Educators can utilize the information given in this study to improve classroom setting and provide an environment that is conducive for all types of learners with varied teaching strategies.

Recommendations

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Findings from this study necessitated the following recommendations:

Preparation of Nursing Curriculum that utilizes more active strategies to accommodate the diverse learning preferences of the students in their different levels of studies.

Suggestion for Further Studies

A longitudinal study into learning preferences and teaching styles in Schools of Nursing in Anambra State.

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