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Identification of learning styles among undergraduate nursing students

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Abstract---Background: This study aimed at identifying Learning styles of Undergraduate Nursing Students. Methods: Participants were 98 first year Nursing Students at selected College of Nursing. A structured questionnaire was used to collect baseline data of students and their family, details on their Study habits, Sleep pattern and School performance. Learning Styles Inventory was used to collect data on type of Learning Style of students. Results: Findings revealed that, the predominant learning style of 51(50%) undergraduate nursing students was Visual style followed by Auditory 25(25.5%) and Tactile 8(8.2%). A small proportion of nursing students preferred a combination of different learning styles. It was found that, there was a significant association between the frequency of library usage per week among undergraduate nursing students and their learning style at $p < 0.05$ level. Findings also revealed that, there was no association between the Learning styles of undergraduate nursing students and their demographic variables. None of the other variables regarding the study habits and grades in school had any association with the learning styles of the nursing students. Conclusion: Nursing faculty need to be conscious of learning styles to provide the right stimulation for students to be successful.

Keywords---learning, undergraduate, nursing students.

Introduction

Learning styles refer to an individual's method of making perception or meaning of anything that is new. This can be commonly done through sight, touch and sound. The term "learning styles" expresses the understanding that every student learns differently. Technically, an individual's learning style refers to the preferential way in which he/she absorbs, processes, comprehends and retains information. It is a way which students adopt to in order to learn concepts. We all experience the world in unique ways, and with that comes variation in the ways

we learn best. Romanelli, Bird and Ryan stated that, learning styles may become an increasingly relevant pedagogic concept as classes increase in size and diversity. Understanding the different types of learning styles can drastically impact the way teachers handle their students, set up group projects and adapt to individual learning. Without understanding and acknowledging the different ways of learning, instructors might end up with a handful of students lagging behind their classmates because their unique learning style hasn't been activated.

A study was conducted by Lamiri, Qaisar, Khoaja, Abidi, Bouzoubaa and Khyati (2020) to identify the learning styles of 49 nursing students. Data was analysed according to the Learning Style Questionnaire, abbreviated French version (LSQ-Fa) developed by Honey and Mumford with four proposed learning styles. They are Activist, Reflector, Theorist and Pragmatist. Findings of this study revealed that, there was a predominance of the reflector style (45%) while 29% preferred pragmatic style followed by the active (12%) and the theorist (10%). The dual learning style category resulted in five combinations: active/pragmatic, active/reflector, reflector/pragmatic, reflector/theorist, theorist/pragmatic. The dual learning style accounted for 62% of the sample, with respondents in this category having the highest scores in two categories, both of which were ranked at the strong or very strong preference level.

Juliet, Kalaichelvi, Vasumathi and Sudha (2019) carried out a study to assess the learning styles and enhancement of learning abilities among 94 undergraduate nursing students in Coimbatore. Learning Style Inventory was used to collect data. Findings revealed that, half of the students 24 (51.06%) in the experimental as well as the control group 24 (51.06%) had a visual learning style. Around 13 (27.16%) and 12 (25.53%) were auditory learners, 5 (10.64%) and 3 (6.38%) were tactile learners in the experimental and control group respectively. A very small proportion 5 (10.64%) and 8 (17.03%) of nursing students had a combined learning style in the experimental and control groups. A study was conducted by Poopala and Hendricks (2014) on learning styles of 202 first semester nursing students in a baccalaureate nursing program, their influences on learning, and academic performance. Results showed that, 63% of students had dual learning styles in their first year, while 53% of students favored reflector learning styles in their final year. In addition, there was a considerable difference in learning styles between the student's ages, but not in academic success.

Anderson (2016) stated that, identifying your preferred learning style can be a useful way to optimise learning opportunities, and can help learners recognise their strengths and areas for development in the way that learning takes place. It can also help teaching faculty to recognise where additional activities are required to ensure the learning experience is robust and effective. A study by Alharbi, Almutairi, Eyad, Alhelih, and Alshehry examined the learning preferences of 130 undergraduate nursing students using Arabic version of the Felder-Silverman learning style model (FSLSM) questionnaire at King Saud University. Results indicated that the most common learning preferences among the nursing students were visual (67.9%), followed by active (50%) and sequential (37.5%) learning preferences. The verbal style was the least common learning preference (3.6%) among the nursing students. There was no association between gender and learning preferences⁶.

Simpson (2020) carried out a study on the Undergraduate Nursing Students' Learning Style Preferences and Preferred Faculty Teaching Methods Compared to the Actual Methods Used by Faculty at East Tennessee State University. The participants were, 184 undergraduate nursing students; and sixty-seven nursing faculty. The Index of Learning Styles survey was used to collect data. Nursing students had either a balanced active/reflective and sequential/global learning style, or a sensing or visual learning styles. With regards to the preferred teaching methods, lectures, and use of visual aids in the classroom were identified as the top teaching methods preferred by both student and faculty participants.

A longitudinal study was conducted by Fleming, Mckee and Huntley (2011) to explore the Undergraduate nursing students' learning styles of one cohort of undergraduate nursing students at an Irish university. Honey and Mumford Learning Styles Questionnaire was administered to a sample of students in their first (n = 202) and final year of study (n = 166), with the final sample number (58) based on matched pairs. The most common dominant learning style in first year was dual learning type (35%) while a large proportion of students (53%) in their final year had no dominant learning style. The preferred learning style of 69% students in their first year and 57% in final year was reflector style. Learning styles were different at the two time points and there was a significant relationship between some learning styles and students' age but did not have an association with their academic achievement.

The Bachelor of Science in Nursing Program is packed with a variety of learning that takes place both in the classroom and the clinical arena. It was hypothesized that, in most instances, nursing students are exposed to traditional teaching approaches that do not equip them with skills for a demanding and ever-changing healthcare system⁹. It is the responsibility of faculty to cater to each student's strengths, ensuring they are truly grasping the information. They must ensure that permanent learning takes place as student nurses are being trained to care for people who are sick and suffering.

Statement of the Problem

Identification of Learning Abilities among Undergraduate Nursing Students at a selected College of Nursing in Coimbatore.

Objectives

- Identify the learning styles of undergraduate Nursing students.
- Associate the learning styles of undergraduate Nursing Students with demographic variables.

Materials and Methods

Research Approach & Design

Quantitative ; Descriptive Research Design

Research Setting

College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore

Population

First Year Undergraduate Nursing Students

Sampling Technique

Using Total Enumeration Method, all students were selected for the study.

Samples

There were totally 99 students out of whom one was absent during the time of study, hence the sample size was 98.

Instruments for Data Collection

The tool for data collection contained the Baseline Data of the nursing Student and basic information regarding the family. The tool contained the following sections:

- Part A: Demographic Characteristics of the Undergraduate Nursing Student
- Part B: Demographic Characteristics of the Family of the Undergraduate Nursing Student
- Part C: Learning Styles Inventory – It was a standardized 24 item survey on a 3-point Likert Scale.

Scoring Interpretation

The score of each section will be totalled. A score of 21 points or more in a modality indicates a strength in that area. The highest of the 3 scores indicates the most efficient method of information intake. The second highest score indicates the modality which boosts the primary strength. A high score in visual modality indicates a strong visual learner. Such a learner benefits from the text, from filmstrips, charts, graphs, etc. If the second highest score is auditory, then the individual would benefit from audio tapes, lectures, etc. If the student is strong kinesthetically, then taking notes and rewriting class notes will reinforce information.

Ethical Considerations

The ethical clearance was obtained from the College Research Committee and permission was also obtained from the Principal of the College of Nursing. Informed and written consent was obtained from the undergraduate nursing students. The study did not pose any threat to the participants. Anonymity of participants was ensured and the responses were kept confidential.

Data Collection Procedure

After explanation of the purpose of the study, the students were given the Questionnaire and requested to complete it. They took about 30 minutes to complete it.

Results

The findings are presented under the following Sub headings

- Demographic Characteristics of Undergraduate Nursing Students and their families
- Findings on Study Habits, Library Usage and Sleep Pattern of Undergraduate Nursing Students
- Findings on Learning Styles of Undergraduate Nursing Students
- Findings on Association between the Learning Styles of Undergraduate Nursing Students and their demographic variables
- Findings on the Association between the Learning Styles of Undergraduate Nursing Students with their Study Habits and Grades in School

Discussion

The data on study habits of nursing students revealed that, majority (85.7%) preferred studying alone, 63 (64.3%) of them were used to studying for more than 2 hours per day. Among the 98 participants, more than half 58(59.2%) did not have the habit of going to the library to utilize learning resources. Data on sleep pattern of students showed that, majority (77.6%) had less than 6 hours of sleep at night and 90 (91.8%) of them had sleep disturbances. Findings on the learning styles of the undergraduate nursing students revealed that, the predominant learning style of 51 (50%) of them was Visual style followed by Auditory 25 (25.5%) and Tactile 8 (8.2%). A small proportion of nursing students also preferred combination of different learning styles (Figure 4). Nurses function in quite a challenging environment where they are required to utilize various methods of learning to process, integrate, and disseminate information. It is important for first-semester nursing students to identify their learning style and be able to recall knowledge gained during the clinical and classroom environment.

It was also found that, there was an association between the frequency of library usage per week among undergraduate nursing students and their learning style at $p < 0.05$ level of significance. None of the other variables regarding the study habits of nursing students and grades in school had any association with their learning styles. A study by Yayehyirad et al (2017) on assessment of gender difference on learning style preference among 415 regular Undergraduate Students of Mekelle University, College of Health Science revealed similar findings like the present study where, 67(27.7%) of the male and 38(24.7%) of female students dominantly preferred visual style. Findings also revealed that there was no significant association between gender and learning style preference.

Conclusion

Today's nursing faculty are responsible for providing an environment that motivates learning among nursing students. It is essential to make students aware of their learning styles. This will help them grasp, remember and apply concepts better. The results of this study will help provide new information for nursing educators to utilize a combination of learning styles to cater to the individual needs of nursing students. This will also help to bridge the gap between theory and practice.

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Table 1
Demographic Characteristics of Undergraduate Nursing Students (n=98)

Demographic Characteristics	Number (n)	Percent (%)
Age		
17 years	26	26.5
18 years	53	54.1
19 years	19	19.4
Gender		
Male	19	19.4
Female	79	80.6
Birth Order		
Eldest	57	58.2
Middle	33	33.7
Last	6	6.1
Twins	2	2
Mother Tongue		
Tamil	73	75
Malayalam	11	11.2
Telugu	7	7.1
Butanis	4	4.1
Hindi	1	1
Area of Residence		
Urban	43	43.9
Rural	55	56.1
Current Place of Stay		
Hostel	76	77.6
Home	22	22.4
Type of Family		
Nuclear	87	88.8
Joint	11	11.2

Table 2
Demographic Characteristics of Families of Undergraduate Nursing Students (n=98)

Demographic Characteristics of Family	Number (n)	Percent (%)
Educational Qualification of Fathers		
No Formal Education	13	13.3
High School	38	38.8
Higher Secondary	28	28.6
College/Professional	19	19.4
Educational Qualification of Mothers		

No Formal Education	12	12.2
High School	37	37.8
Higher Secondary	18	18.4
College/Professional	31	31.6
Occupation of Fathers		
Unemployed	12	12.2
Skilled workers	30	30.6
Government Job	10	10.2
Unskilled Worker	8	8.2
Teachers	38	38.8
Occupation of Mothers		
Home makers	64	65.3
Own Business	8	8.2
Government Job	2	2
Teachers	24	24.5

Table 3
Association between the Learning Styles of Nursing Undergraduate Nursing Students and Demographic Variables

S.No	Demographic variables	Category	Frequency	Type of Learning Styles				χ^2 Value (NS)	χ^2 Table value
				Visual	Auditory	Tactile	Combined		
1.	Age (Years)	17	26	18	6	1	1	7.909	12.59
		18	53	22	14	5	12		
		19	19	10	5	2	2		
2.	Gender	Male	19	13	1	1	4	5.9	7.81
		Female	79	37	24	7	11		
3.	Area	Urban	43	21	8	5	9	4.14	7.81
		Rural	55	29	17	3	6		
4.	Birth Order	Eldest	57	26	14	7	10	12.41	16.91
		Middle	33	18	10	3	2		
		Last	6	4	0	0	2		
		Twins	2	0	2	0	0		
5.	Mother Tongue	Tamil	73	35	21	6	11	9.90	21.02
		Malayalam	11	4	2	2	3		
		Hindi	1	1	0	0	0		
		Butani	4	3	0	0	1		
		Telugu	7	6	1	0	0		
6.	Current Place of Stay	Hostel	76	39	22	5	10	3.63	7.81
		Home	22	11	3	3	5		
7.	Type of Family	Nuclear	87	44	23	7	13	0.371	7.81
		Joint	11	6	2	1	2		
8.	Educational Qualification of Fathers	No formal Education	13	3	7	1	2	10.75	16.91

S.No	Demographic variables	Category	Frequency	Type of Learning Styles				χ^2 Value (NS)	χ^2 Table value
				Visual	Auditory	Tactile	Combined		
		High School	38	22	9	3	4	6.43	16.91
		Higher Secondary	28	15	6	1	6		
		College	19	10	3	3	3		
		No formal Education	12	5	5	1	1		
9.	Educational Qualification of Fathers	High School	37	19	10	2	6	6.43	16.91
		Higher Secondary	18	9	3	1	5		
		College	31	17	7	4	3		

(Table Continued)

S.No	Demographic variables	Category	Frequency	Type of Learning Styles				χ^2 Value (NS)	χ^2 Table value
				Visual	Auditory	Tactile	Combined		
10.	Occupation of Fathers	Unemployed	12	5	2	2	3	6.55	21.02
		Skilled Workers	30	18	8	1	3		
		Unskilled Workers	8	4	1	1	2		
		Teachers	38	18	12	3	5		
		Government Job	10	5	2	1	2		
11.	Occupation of Mothers	Home Makers	64	33	17	4	10	8.70	16.91
		Own Business	8	5	3	0	0		
		Government Job	2	1	0	1	0		
		Teachers	24	11	6	3	4		

Table 4
Association between the Learning Styles of Undergraduate Nursing Students and Study Habits and Grades in School

S.No	Demographic variables	Category	Frequency	Type of Learning Styles				χ^2 Value	χ^2 Table value
				Visual	Auditory	Tactile	Combined		
1.	Method of Study	Individual	84	45	20	6	13	2.17 (NS)	7.81
		Group	14	5	5	2	2		
2.	Number of Hours of Study	<2 Hours/Day	35	22	8	2	3	3.65 (NS)	7.81
		>2 Hours/Day	63	28	17	6	12		
3.	Frequency of Library Usage/Week	Never	58	34	8	6	10	9.14*	7.81
		Twice a week	40	16	16	2	6		
4.	Sleep Disturbances	Yes	90	45	23	7	15	1.0 (NS)	7.81
		No	8	5	2	1	0		
6.	10 th Standard Grades	>60%	0	0	0	0	0	0.37 (NS)	12.59
		61-80%	87	45	21	7	14		
		<80%	11	6	4	0	1		
7.	12 th Standard Grades	>60%	12	7	3	2	0	8.82 (NS)	12.59
		61-80%	72	38	20	5	9		
		>80%	14	5	2	1	6		

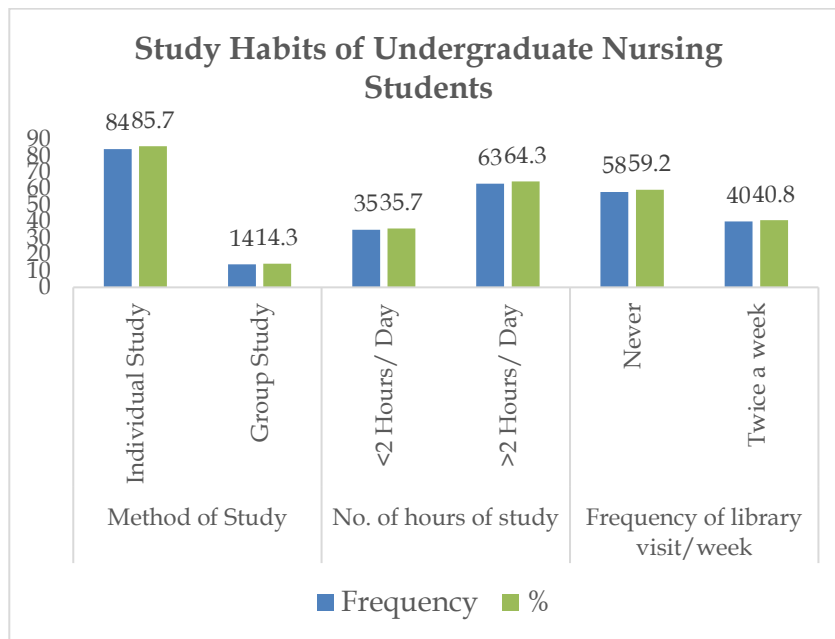


Figure 1. Study Habits of Undergraduate Nursing Students

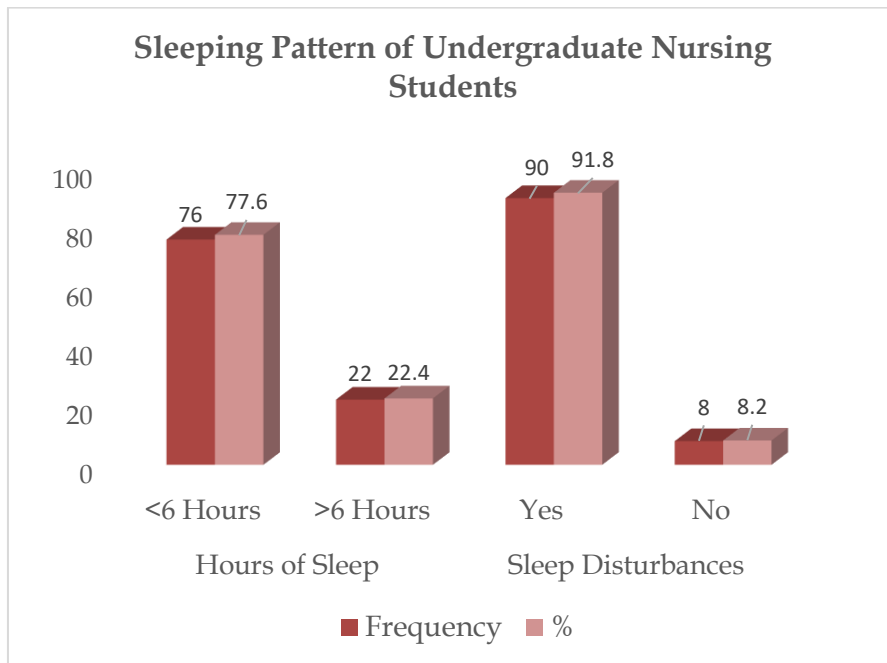


Figure 2. Sleep Pattern of Undergraduate Nursing Students

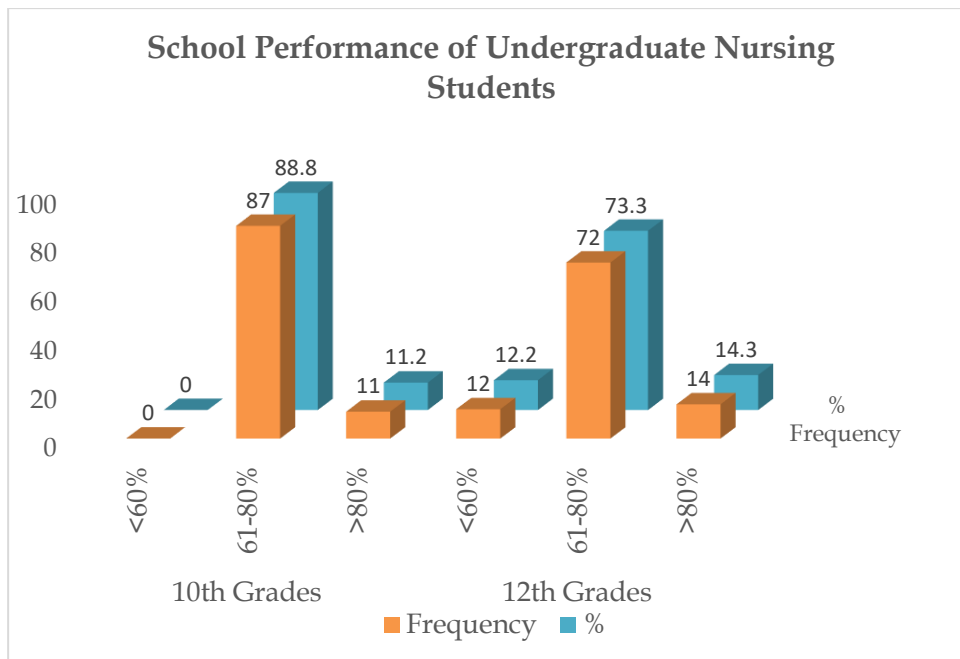


Figure 3. School Performance of Undergraduate Nursing Students

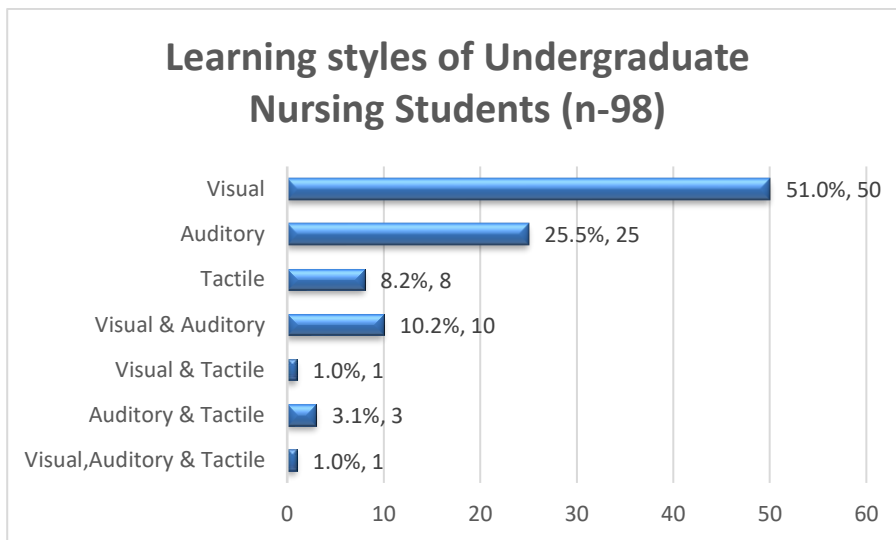


Figure 4. Learning Styles of Undergraduate Nursing Students