
Learning Styles of First-Semester Nursing Students at a Colombian Public University

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Abstract: The study on the learning styles of first semester nursing students in a Colombian public university highlights the diversity of preferences in the way students assimilate knowledge. Identifying these styles is crucial to design more effective pedagogical strategies that promote meaningful learning, adjusting to the individual needs of students. Adapting teaching to these styles could improve both academic performance and the overall learning experience.

Objectives: To determine the predominant learning styles of first semester nursing students at the Universidad Popular del Cesar in Valledupar, Colombia, by applying the VARK questionnaire.

Methods: This quantitative, descriptive and cross-sectional study with 39 students offers a timely view of the observed characteristics, allowing to analyse and describe concrete data at a specific point in time. This approach is useful for identifying trends or patterns without involving changes over time or manipulation.

Results: The results showed that the predominant learning style was reading/writing (27.4%), followed by kinaesthetic (26.3%), visual (23.6%) and auditory (22.4%). This suggests that nursing students tend to learn best through reading and writing, although there is also a diversity of preferences towards hands-on, visual and auditory learning, reflecting the need to use varied teaching methods.

Conclusions: These findings suggest the importance of adapting teaching strategies to students' learning preferences in order to improve their academic performance and satisfaction. Longitudinal and comparative studies are recommended to assess the evolution of learning styles throughout nursing education and their relationship with cultural and educational variables.

Keywords: learning styles, nursing students, VARK questionnaire, nursing education.

1. Introduction

Nursing education plays a pivotal role in the education of future healthcare professionals, and understanding how students approach and assimilate the learning process is crucial for adapting pedagogical methodologies and promoting an effective educational environment (Vizeshfar & Torabizadeh, 2018). First semester students experience a crucial transition from secondary to higher education, and it is essential to explore their learning styles in order to design teaching strategies that foster optimal academic development from the outset (Rassool & Rawaf, 2007).

Internationally, several studies have used the VARK instrument to identify learning styles in university students. In Saudi Arabia, Aljohani and Fadila (2018) found that the predominant learning style in nursing students was multimodal (58.6%), followed by kinaesthetic (17.2%), auditory (13.8%), visual (6.9%) and reading/writing (3.4%). Meanwhile, in Turkey, Çelik et al. (2017) identified that the most frequent learning style in first-year nursing students was multimodal (63.3%), followed by kinaesthetic (15.8%), auditory (10.8%), reading/writing (5.8%) and visual (4.2%).

In the Latin American context, a study conducted in Chile showed that the learning style with the highest moderate preference among nursing students was Reflective with an average of 53.20%, followed by Theoretical with 39% (Mancilla et al., 2020). In Colombia, Matagira-Rondón (2019) found that the learning style that predominated in a university in Medellín was the Reflective with 15% followed by Theoretical with 14%.

Learning styles refer to the different ways in which people perceive, process, understand and remember information (Kolb & Kolb, 2005). There are several theoretical models that explain learning styles, one of the best known is the VARK model developed by Fleming and Mills (1992), which classifies learning styles into four categories: visual, auditory, reading/writing and kinaesthetic.

2. Methods

A quantitative, descriptive and cross-sectional study was carried out. The population consisted of first semester students of the Nursing programme of the Universidad Popular del Cesar. The entire sample of 39 students who met the established inclusion and exclusion criteria was used.

The VARK questionnaire, developed by Fleming and Mills (1992), was used for data collection. This instrument consists of 16 multiple-choice questions that assess learning preferences in four categories. The VARK questionnaire has been extensively validated in various educational contexts, including the nursing field (Leite et al., 2010; Peyman et al., 2014).

The research was conducted following the ethical principles established in the Declaration of Helsinki and Resolution 8430 of 1993 of the Colombian Ministry of Health. The confidentiality of the information collected was guaranteed and the autonomy of the participants was respected, who signed an informed consent form before starting the study.

3. Results

According to the results obtained in the application of the VARK questionnaire, the individual learning preferences of each student were identified (Table 1). The predominant learning style was reading/writing with a total of 182 responses (27.4%), followed by kinaesthetic with 175 responses (26.3%), visual with

157 responses (23.6%) and finally auditory with 149 responses (22.4%) (Table 2).

Table 1. First semester students' individual learning preferences (see end of article).

Table 2. Percentage distribution of learning styles in first-semester nursing students

Learning Style.	Frequency (F).	Percentage (%)
(%)Reading/Writing	182	27,4
Kinaesthetic	175	26,3
Visual	157	23,6
Auditory	149	22,4

These findings are consistent with those reported by Kharb et al. (2013) in their study of medical students in India, where they found that multimodal learning style was the most common (61%), followed by kinaesthetic (27%), visual (7%), auditory (4%) and reading/writing (1%). Similarly, Stirling and Alquraini (2017) obtained similar results in nursing students in Saudi Arabia.

On the other hand, the results obtained contrast with those reported by Akhlaghi et al. (2018) in their research with nursing students in Iran, where they identified that the predominant learning style was visual (35.9%), followed by auditory (28.2%), kinaesthetic (19.2%) and reading/writing (16.7%).

Conclusions The predominant learning style of first semester nursing students at the Universidad Popular del Cesar was reading/writing, followed by kinaesthetic, visual and auditory. These findings highlight the importance for nurse educators to identify and address differences in their students' learning preferences in order to create an inclusive and flexible educational environment.

Understanding individual learning preferences can contribute to the development of metacognitive skills in students, fostering self-regulation and self-efficacy in the learning process, which in turn improves academic performance and satisfaction (Araya-Pizarro & Espinoza Pastén, 2020).

Recommendations It is recommended that longitudinal and comparative studies be carried out to evaluate the evolution of learning styles throughout nursing education and their relationship with cultural and educational variables. It is also suggested to broaden the scope of the research to include students from different semesters and nursing programmes, and to explore the relationship between learning styles and

other variables such as academic performance, career satisfaction and clinical skills.

The results of this study can be used by faculty at the Universidad Popular del Cesar to adjust their teaching methods to accommodate the different ways in which their students learn optimally. In addition, it is recommended that nursing students be aware of their own learning styles and use strategies that suit their preferences.

4. Discussion

4.1. Problem Reality

Internationally, several studies have used the VARK (Visual, Auditory, Reading/Writing and Kinaesthetic) instrument to identify learning styles in university students. In Saudi Arabia, Alkooheji and Fadila (2018) found that the predominant learning style in nursing students was multimodal (58.6%), followed by kinaesthetic (17.2%), auditory (13.8%), visual (6.9%) and reading/writing (3.4%). Meanwhile, in Turkey, Çelik et al. (2018) identified that the most frequent learning style in first-year nursing students was multimodal (63.3%), followed by kinaesthetic (15.8%), auditory (10.8%), reading/writing (5.8%) and visual (4.2%). In Latin America, specifically in Chile, a study showed that the learning style with the highest moderate preference among nursing students was Reflective with an average of 53.20%, according to course and years of study, followed by Theoretical with 39%, additionally no statistically significant correlations were found between years of study and learning styles ($p > 0.05$) on the other hand, most of the students surveyed have one or two learning styles (Mancilla et al, 2020).

In Colombia, according to data from the Ministry of National Education (2021), nursing is one of the most demanded careers, with a total of 36,951 students enrolled in 2020. In this context, a study conducted by Matagira-Rondón (2019) at a university in Medellín found that the learning style

that predominated was reflective with 15%, followed by theoretical with 14%. Additionally, she mentions that, although there is research on this topic in various areas, there has been little research on this topic in the field of nursing. Therefore, understanding and applying active, reflective, theoretical and pragmatic learning styles to the disciplinary component is considered fundamental for the success of the

teaching-learning process, allowing the curriculum to be adjusted to the needs of the students.

The Universidad Popular del Cesar, located in Valledupar, is a public institution that offers the Nursing Programme and has a diverse student population. In this sense, the need arises to investigate the learning styles of first semester nursing students at this university, in order to generate knowledge that will allow teachers to adapt their pedagogical strategies and favour the teaching-learning process.

In addition to learning styles, it is important to consider other factors that may influence the academic performance of nursing students such as the identification of the use of emotional intelligence and stress coping strategies as these are variable and may affect the performance of nursing students. Araya-Pizarro and Espinoza Pastén (2020) point out that motivation and academic self-efficacy are factors that can influence students' academic success.

4.1. Theoretical underpinnings

Understanding students' learning styles is essential to improving the quality of nursing education and promoting success. By identifying students' learning preferences, educators can adapt their teaching strategies to meet individual needs and foster a more effective learning environment.

In addition, first semester students are at a crucial stage of transition and adaptation to higher education, which can significantly influence their academic performance and future professional practice. Therefore, it is essential to investigate learning styles at this early stage to provide the necessary support and ensure that students develop strong skills from the beginning of their nursing education.

Furthermore, research on this topic has been conducted internationally and nationally, but there is a need for more evidence specific to first semester students, and the results of this study could be used to design educational interventions and support programmes tailored to the needs of this particular student population.

Finally, this research has the potential to have a positive impact by understanding and addressing students' learning styles early in their education,

critical thinking, problem solving and self-directed learning skills, which are fundamental to success in nursing practice, can be fostered. This, in turn, could contribute to improving the quality of nursing care and patient health outcomes in the future.

Learning styles refer to the different ways in which people perceive, process, understand and remember information (Kolb & Kolb, 2005). These styles influence how students interact with the learning environment and how they acquire and apply knowledge. Understanding the learning styles of nursing students is crucial for adapting teaching strategies and improving academic outcomes (Rassool & Rawaf, 2007).

There are several theoretical models that explain learning styles, one of the best known is the VARK (Visual, Auditory, Reading/Writing and Kinaesthetic) model developed by Neil Fleming and Colleen Mills (1992). This model classifies learning styles into four categories:

1. Visual: Students with a preference for visual style learn best through pictures, graphs, charts, diagrams and videos (Kharb et al., 2013).

2. Auditory: Auditory learners prefer to learn through listening to verbal explanations, discussions and debates (Prithishkumar & Michael, 2013).

3. Reading/Writing: Reading/writing-inclined students learn best through reading texts and writing notes (Urval et al., 2014).

Kinesthetic: Kinesthetic learners prefer to learn through practice, experimentation and active participation in activities (Samarakoon et al., 2013). In addition, the VARK model recognises that students may have multimodal preferences, i.e. they may exhibit a combination of two or more learning styles (Peyman et al., 2014).

5. Conclusions:

The findings highlight the relevance of customising teaching strategies according to the predominant learning styles of nursing students as a way to optimise their academic performance and satisfaction. Recognising that students learn in different ways - reading/writing, kinaesthetic, visual and auditory - it is recommended that educators diversify teaching

methods, integrating resources that address each style. In addition, longitudinal studies are needed to observe how these styles evolve as students progress in their education, which would make it possible to identify possible changes and their relationship with variables such as the cultural environment and the educational context. This continuity of research would be key to developing more effective and culturally relevant pedagogical approaches. Referencias

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