DOI: https://doi.org/10.53350/pjmhs2023175152

ORIGINAL ARTICLE

Learning Choices of Medical Students: An Experience from a Private Medical College in Lahore

MUHAMMAD SOHAIL ASLAM[1], ASMA SIDDIQUE[2], ATIKA MASOOD[3], NEELOFAR YOUSAF WARRAICH[4], MISBAH-UL-QAMAR, MARIAM SHEIKH[6]
[1]*Associate Professor,* [5]*Assistant Professor, Department of Physiology, Akhtar Saeed Medical & Dental College, Lahore*
[2]*Associate Professor of Anatomy, Akhtar Saeed Medical & Dental College, Lahore*
[3]*Professor of Pathology, Akhtar Saeed Medical & Dental College, Lahore*
[4]*Assistant professor of Pharmacology, Akhtar Saeed Medical & Dental College, Lahore*
[6]*Associate Professor of Dermatology, Akhtar Saeed Medical & Dental College, Lahore*
Correspondence: *Dr. Muhammad Sohail Aslam, E-mail: dr.msohailaslam@yahoo.com Cell: 0321-8856995*

ABSTRACT

Aim: To determine the patterns of learning methods of undergraduate medical students.
Study design: Descriptive cross-sectional study.
Place and duration of study: Akhtar Saeed Medical & Dental College, Lahore from 15th November 2022 to 15th January 2023.
Methodology: One hundred and six undergraduate medical students, comprising 54 males and 52 females. The questionnaire consisted of 16 items that identified four distinct learning choices: visual, aural, reading/writing and kinesthetic.
Results: 14.33% students learned by seeing; 26.59%studied by hearing; 19.16%learned by reading/writing and 19.10% students liked to study by using physical methods.16.39% of students used bimodal sensory modalities and only 4.42% used more than one sensory modality for learning. The results of the study will help medical teaching faculty to modify their educational strategies in response to learning methods of their students.
Conclusion: The valuable insight into students' various approaches to learning and will help teachers to modify their teaching strategies.
Keywords: Learning choices, VARK questionnaire, Medical students, Teaching strategies

INTRODUCTION

Despite being a large variety of current learning methods based on various psychological theories[1,2], a lot of interest is being shown by teachers to know what are the different approaches that are used by the students for the learning process[3]. This is because students learning choices can be affected in a myriad of ways by the awareness of their education conditions.

During undergrad years, medical students need to gain vast amounts of information and must develop their own learning styles. As mentioned by Keefe, study methods combine mental, emotional and psychological qualities that specify a student's connection and reaction to the schooling environment[4]. It has also been urged that in addition to the content knowledge, medical teachers should also be well versed with the learning preferences of students to help them in their education[5].

Students study manners are influenced by many factors including age, gender, mind processing, social and cultural thinking.[6] In addition, students employ various sensory means to obtain and assimilate knowledge.[7] Fleming described four sensory modalities comprising visual (V), aural (A), reading/writing (R) kinesthetic (K) called as VARK.[8] In short, visual students learn better by seeing, aural students use listening methods, while some students study better by reading/writing and kinesthetic students use physical methods as a preferential technique to accommodate information.[9] The VARK questionnaire has been specially developed for evaluating learning strategies.

The use of VARK in some studies has revealed that students selected multiple learning techniques.[10] In spite of some inconsistencies in previous studies, little is known about the learning preferences of medical students in Pakistan where the culture and medical education varies greatly from western countries.

The significance of our study is that the performance of the students can be vastly improved as the teachers combine the preferred learning choices of students with their personal teaching methods. This study, therefore, was organized to grade learning predisposition of medical students on our college using the VARK questionnaire.

Received on 03-02-2023
Accepted on 04-05-2023

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted at Akhtar Saeed Medical & Dental College, Lahore from 15th November, 2022 to 15th January, 2023 after obtaining institutional ethical approval. A total of 106 volunteers (54 male and 54 female) students participated in this study. All consenting students of first year MBBS to final year MBBS classes were included while premedical, dental, DPT and students of allied health sciences were excluded from this study. VARK questionnaire measures four perceptual choices (Visual, Aural, Reading/Writing and Kinesthetic). The questionnaire was comprised of sixteen questions with four options each. Each question graded the study choices of participants. Each participant could opt for more than one option to indicate his/her choices for different learning methods. The VARK questionnaire has been reported as valid and reliable by factor analysis techniques.[11] The questionnaire was shared online with the students and it was explained that the study findings will be used for research purposes.

Descriptive statistics were used for questionnaire. Percentage of students who opted for a specific learning choice, was found by dividing their number by the total number (n = 106) for each VARK component.

RESULTS

The mean and standard deviation of visual, auditory, reading/writing and kinesthetic components of the VARK questionnaire were shown in Table 1. 14.33% students learned by seeing; 26.59% studied by hearing; 19.16% learned by reading/writing and 19.10% students liked to study by using physical methods (Fig. 1). 79.18% students preferred to study using either of visual, listening, reading/writing and kinesthetic modalities.16.39% of students used bimodal sensory modalities, only 4.42% students used more than one sensory modality for learning (Fig. 2).

Table1. Descriptive statistics of the patients

VARK	Mean±SD
Visual	15.19±11.54
Auditory	28.19±17.75
Reading/Writing	20.31±16.59
Kinesthetic	20.25±11.91

We can see that there is a strong positive correlation between visual and auditory modalities (r=0.69, p<0.001), indicating that students who prefer visual learning also tend to prefer auditory learning. There is also a moderate positive correlation between reading/writing and kinesthetic modalities (r=0.51, p<0.001), indicating that students who prefer reading/writing learning also tend to prefer kinesthetic learning. Additionally, there are moderate positive correlations between visual and kinesthetic modalities (r=0.40, p<0.001) and auditory and kinesthetic modalities (r=0.43, p<0.001), indicating that students who prefer visual or auditory learning also tend to prefer kinesthetic learning to some extent. However, the correlation between visual and reading/writing modalities (r=0.38, p=0.001) and auditory and reading/writing modalities (r=0.41, p<0.001) are weaker, indicating that students who prefer visual or auditory learning may not necessarily prefer reading/writing learning, and vice versa (Table 2).

Table 2: Correlation analysis between the various sensory modality scores

	Visual	Auditory	Reading/Writing	Kinesthetic
Visual	r=1.00.	r=0.69	r=0.38	r=0.40
Auditory	r=0.69, p<0.001.	r=1.00	r=0.41	r=0.43
Reading/Writing	r=0.38, p=0.001.	r=0.41, p,0.001.	r=1.00	r=0.51, p<0.001.
Kinesthetic	r=0.40, p<0.001.	r=0.43, p<0.001	r=0.51	r=1.00

Fig. 1: Percentages of single modality choices

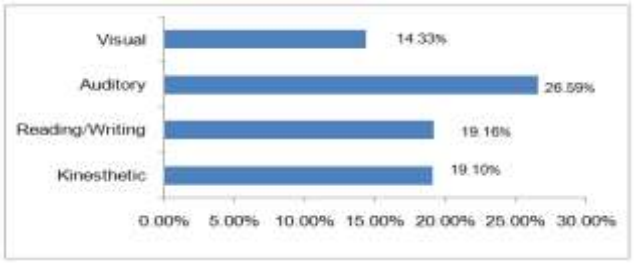
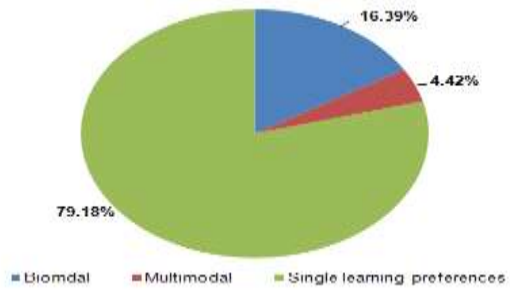


Fig. 2: Percentages of bimodal and multimodality choices



DISCUSSION

The aim of our study was to know about dispensation of study manners of undergrad medical students. Generally, our findings provide an understanding of the learning choices that our students employ to study various subjects. We opinion this study will help in understanding various aspects of student education development.

It was noted that students use different sources of information for studying. The VARK questionnaire is universally employed to note the study methods of students[12]. Learning techniques differ amongst various groups because of cultural differences, kinds of studies and attributes of student personalities. In this study, the mean VARK scores for reading/writing (20.31%) and auditory learners (28.19%) were more than that of visual (15.19%) and kinesthetic learners (20.25%). This may be an indication of the reality that though our students presently are still relying on conventional learning styles but they are gradually adopting technology based study methodologies also. This is in contrast to a study conducted in Saudi Arabia in which the students show a heavy involvement in new technology based study methods.[13] Another study revealed that the mean VARK scores for reading/writing (4.9%) and kinesthetic (5%) modalities were more than that of visual (3.1%) and auditory (4.7%) learners[14].. Similarly, it has also been described that technical students were more of a kinesthetic nature compared to business students who were reading/writing type learners[15].

The disclosure of use of multiple study choices in our students is in agreement with a study which described the American medical students. Students understanding of subjects and learning experiences have been analyzed in relation to the effectiveness of various technology tools[16].

Educational strategies can be upgraded by medical teaching faculty when they know the methods of learning of their students. Competencies of medical students in terms of core knowledge, clinical skills and demeanor can be vastly improved as the medical teachers combine the preferred learning choices of students with their personal teaching methods and experience[17].

CONCLUSION

This study provides valuable insight into students' various approaches to learning and will help teachers to modify their teaching strategies.

Conflict of interest: Nil

REFERENCES

1. Newton PM, Miah M. Evidence-based higher education: is the learning styles 'myth' important? Front Psychol 2017; 8: 444.
2. Cerni T, Benedetto AD, Rumiati RI. The contribution of personality and intelligence toward cognitive competences in higher education. Front Psychol 2021; 12: 621990.
3. Mokahal AE, Ahmad A, Habib JR, Nasrallah AA, Francis G, Sabra R, et al. Do medical students' learning styles and approaches explain their views and behavior regarding lecture attendance?. Med Sci Educ 2021; 31(5): 1693-1702.
4. Abouzeid E, Fouad S, Wasfy NF, Alkhadragy R, Hefny M, Kamal D. Influence of personality traits and learning styles on undergraduate medical students' academic achievement. Adv Med Educ Pract 2021; 12: 769-77.
5. Top LM, Schoonraad SA, Otero VK. Development of pedagogical knowledge among learning assistants. Int J Stem Educ 2018; 5(1): 1.
6. Stander J, Grimmer K, Brink Y. Learning styles of physiotherapists: a systematic scoping review. BMC Med Educ 2019; 19: 2.
7. Hassanzadeh S, Moonaghi HK, Derakhshan A, Hosseini SM, Taghipour A. Preferred learning styles among ophthalmology residents: an iranian sample. J Ophthalmic Vis Res 2019; 14(4): 483-90.
8. Aldosari MA, Aljabaa AH, Al-Sehaibany FS, Albarakati SF. Learning style preferences of dental students at a single institution in Riyadh, Saudi Arabia, evaluated using the VARK questionnaire. Adv Med Educ Pract 2018; 9: 179-86.
9. Amaniyan S, Pouyesh V, Bashiri Y, Snelgrove S, Vaismoradi M. Comparison of the conceptual map and traditional lecture methods on students' learning based on the vark learning style model: a randomized controlled trial. Sage Open Nurs 2020; 6: 2377960820940550.
10. Mozaffari HR, Janatolmakan M, Sharifi R, Ghandinejad F, Andayeshgar B, Khatony A. The relationship between the vark learning styles and academic achievement in dental students. Adv Med Educ Pract 2020; 11: 15-19.
11. Stirling BV, Alquraini WA. Using VARK to assess Saudi nursing students' learning style preferences: Do they differ from other health professionals? J Taibah Univ Med Sci 2017; 12(2): 125-30.
12. Akhlaghi N, Mirkazemi H, Jafarzade M, Akhlaghi N. Does learning style preferences influence academic performance among dental students in Isfahan, Iran? J Educ Eval Health Prof 2018; 15: 8.
13. Nuzhat A, Salem RO, Quadri MS, Al-Hamdan N. Learning style preferences of medical students: a single-institute experience from Saudi Arabia. Int J Med Educ 2011;2:70-3.
14. Ni D, Wang S, Liu G. The EEG-Based Attention Analysis in Multimedia m-Learning. Comput Math Methods Med 2020; 2020: 4837291.
15. Omar E. Perceptions of teaching methods for preclinical oral surgery: a comparison with learning styles. Open Dent J 2017; 11: 109-19.
16. Chen HJ, Liao LL, Chang YC, Hung CC, Chang LC. Factors influencing technology integration in the curriculum for Taiwanese health profession educators: a mixed-methods study. Int J Environ Res Public Health 2019; 16(14): 2602.
17. Childs-Kean L, Edwards M, Smith MD. Use of learning style frameworks in health science education. Am J Pharm Educ 2020; 84(7): 7885.