

ORIGINAL ARTICLE

Determining Students Preferred Learning Styles, Revisited as A Need of TodayAtteaya Zaman¹, Lubna Rani Faysal², Saima Mumtaz³, Aqsa Malik⁴, Yasir Iqbal⁵, Tehmina Qamar⁶**ABSTRACT**

Objective: To determine the most preferred learning styles of the medical undergraduates and to emphasize upon its utility in student centered teaching.

Study Design: Descriptive, cross-sectional study.

Place and Duration of Study: The study was carried at the Department of Biochemistry, Federal medical & Dental college from October to November 2019.

Materials and Methods: The study was carried on 1st year MBBS students after the approval of institutional ethics committee. A total of 85 students participated in the study out of class of 100 students. The sampling was purposive. The VARK (Visual, auditory, read-write, & Kinesthetic) inventory Tool version 7.1 was used as a survey questionnaire to gather the data about the preferred learning styles by the students. The collected responses were documented as VARK scores which were analyzed by using SPSS version 21. The quantitative data was expressed as frequencies & percentages

Results: Out of 85 students who took part amongst 100, 29% were males while 71% were females. The mean age of participants was 18.3 years. About 63% students preferred multimodal learning style while among the students preferred unimodal learning style, the predominant learning style identified was kinesthetic (34%), followed by auditory (15%) and visual (12%) and lastly read-write (8%).

Conclusion: The students prefer to use a combination of learning styles rather than sticking to one style predominantly. The cognizance of educators for learning styles of the students and planning of teaching activities accordingly optimizes their learning.

Key Words: Learning Styles, Medical Students, Student Centered Teaching, Teaching-Learning Methods, Undergraduate Students.

Introduction

Learning styles is a combination of complex cognitive, affective, and physiological characters which serve as an indicator of how the information is perceived by the learner.¹ It is an individual's natural and characteristic pattern of securing and perceiving information.²

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It is a challenge to impart new knowledge in a limited time frame so that it is easily perceived, retained, and interpreted by the students. It is also imperative on part of instructor to have awareness and understanding of styles of learning of students to facilitate the learning process.³ Some of the students have preference for multiple learning styles whereas others prefer only one learning method.⁴ Students with visual learning preference take in and give information completely and often make diagrams to comprehend concepts. Students with aural learning preference would like to listen while learning. Students with read-write learning style, favor textbooks to understand learning material whereas those with kinesthetic learning will like hands-on approach, including real-life examples and application of new materials.⁵

Exploring the preferred way of learning by the students is an important activity but unfortunately our educational system there is no provision of any such activity to identify the learning styles of our medical students. Furthermore, knowledge on

students' styles of learning is a neglected approach in our medical classrooms. As a result, curriculum has produced a generation of medical graduates who are ignorant about their preferred learning styles and even the teachers are not aware how to convey their message effectively.⁶ Therefore, the medical students face difficulties in perceiving and retaining information, this leads to academic failures which can be easily prevented if predicted earlier.⁷

The literature search does not identify any solitary fine-teaching-learning plan that is found to work for each individual learner, it happens to be the sole responsibility of instructors to cater for the variety of learning styles amongst students and design a blended, suitable teaching approach to address the learning needs. The ability to facilitate all the students with different learning preference allows educators to help in enhancing student's performance.⁸ Identifying styles of learning can potentially be highlighted in medical curriculum so as it encourages blending of teaching methodologies with diverse learning styles in entire batch of students, particularly aimed at low scorers, slow learners, or below average learners to perform better concomitantly.⁹

The present study is focused on the significance of addressing the diversity of styles of learning among medical students and its importance to plan the teaching strategies accordingly. The study conducted emphasizes upon the dire need of having knowledge of students' preferred learning styles to deliver the content effectively & its colossal impact in student centered teaching.

Materials and Methods

The study was descriptive, cross-sectional, carried on 1st year MBBS students at Federal medical & dental college from October to November 2019. It was conducted after the approval from institutional ethics committee and permission of the Director of the medical college.

An informed consent was taken before the initiation of the study. All the students of first year MBBS were included except for those who were absent on the day of data collection. It was a purposive sampling. The data regarding students' responses for their preferred learning style was collected by using VARK learning styles inventory, an established tool to determine learning styles. VARK questionnaire is a

valid & reliable tool used already in many studies. VARK is an abbreviation of four sensory modes of knowledge acquisition (visual, aural, reading- writing & kinesthetic). It comprises of 14 questions of multiple choice with four options to select an answer. All options correspond to four learning preferences. Students can select more than one choices for every question. The collected data was documented and put to analysis in SPSS version 21.

Results

Out of 100 students 85 opted to participate in the study. Mean age of students was 18 ± 3.15 years and 71% were the females (Figure 1). It was noted that predominant learning style in participants was kinesthetic (34%), followed by auditory (15%), then visual (12%), and lastly read-write (8%). (Figure 2) Most of the students preferred more than one learning style in which majority used bimodal learning style in different combinations like VK 32%, VA 31%, AR 30.50%, and RK 28.0%, while some of the students opted for tri-modal predominant learning style as ARK 13%, and VRK 12%, and 3.5% preferred the quadri-modal style. (Table I) There was no effect of gender in choosing the preferred learning style.

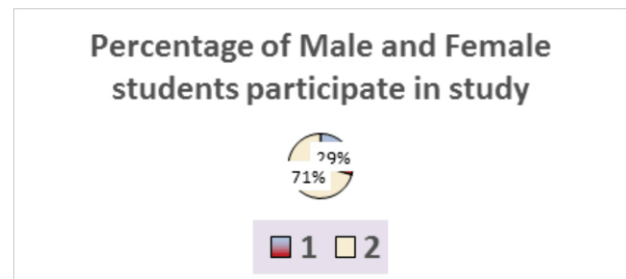


Fig. 1: Gender Distribution of the Participants

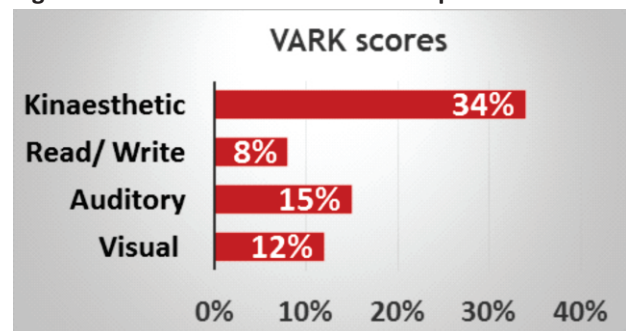


Fig. 2: Unimodal Preference of Participants

Discussion

In the present study, majority of students 63% displayed preference for multimodal styles of learning, showing their multivariate approaches for

Learning style	Percentage of the Participants (n=85)
VK	32
VA	31
AR	30.50
RK	28
ARK	13
VRK	12.4
KA	12
VARK	3.50

Table I: Multimodal Preferences of The Participants for Learning Styles

acquisition of knowledge with highest number of students having preference for VK (32%) followed by VA (31%). Among the unimodal learning style, the highest percentage was for Kinesthetic (34%) followed by auditory (15%), visual (12%) and the lowest number of students opted for Read/write (8%). There was no association of gender with the learning style.

The days of just delivering a lecture to a passive group are over. The medical educationists are now adapting to the newer teaching strategies according to the need of a learner keeping their preferences to attain knowledge, a paradigm shift from teacher centered to the student-centered teaching.¹⁰ It is imperative to understand the diverse learning styles of the students and their importance in achieving academic excellence.¹¹

There are various studies to explore the students' preferences for the learning styles with variable findings. In a study conducted at Turkey in 2006 on first year medical students by using the Turkish version of VARK, the results were like our study, 63.9% preferred the multimodality while 36% preferred the unimodality. In unimodality the highest percentage was of kinesthetic learners in both studies; 23.3% in their study while 34% in our study. The percentage of students using quad modality was 12.9% vs 3.5% in our study.¹²

In the present study, majority of students (63%) displayed preference for multimodal styles of learning, indicating their preferred multivariate approaches for perceiving information. While a similar work by Nuzhat et al states that a high percentage of students exhibited multi modal learning style i.e. about 72.6%.¹³ This implies that

most students learn effectively if modes of information transfer include a combination of strategies which strike pictorial, auditory, read-write and kinesthetic styles. Increased utility of multimedia for instruction can ensure to give prospects for students to be presented with numerous representations of study material i.e., text, audiovisual, auditory, imageries and interactive content to provide for more productively to varied styles of learning preferred in students.¹⁴ In another study done by Baykan on medical students of first year reported similar findings, 36.1% of the learners favored unimodal method while 63.9% favored multimodal styles while no noteworthy contrast was appreciated between gender in preferred learning styles.¹⁵

Contrary to these findings, there are variations in reports on preferences of learning of medical students from different countries which can be attributed to variations in practices of teaching being adapted on premedical times and learning culture of that region. Among all these studies there was no association of the gender with any preferred learning style while the findings regarding gender association were quite different in a study conducted by Wehrwein EA, Lujan HL, DiCarlo SE. where male students predominantly preferred quad modal instruction, while the majority of female students opted for the unimodal instruction with a preference for Kinesthetic mode.¹⁶ Hence showing that male and female students have significantly different learning styles.

While some of the students show keenness for preferring single modality out of the four, majority of the students use the multimodal learning style, and they must make a special effort to comprehend the content delivered. To cater to these requirements, teachers should first be made aware of learning styles of their students, which he or she is going to teach. Active student involvement in their learning plays a vital part in enhancing thinking abilities like inquiry and information analysis. This task can be possibly achieved only if active instructional strategies and learning approaches are adapted in the classrooms according to the learning needs of the learners rather than passive learning in the form of conventional classroom lectures which were mainly centered to the needs of auditory learners.¹⁷

Unmatched teaching–learning methodologies and learning styles can adversely affect learning and cause dissatisfaction on part of students.¹⁸ Therefore, methods of tailoring instruction to students' preference of learning style are strongly debated upon. This stands out with a study performed by Stirling BV who reported that the teaching staff was voluntarily using teaching methods for active learning that were preferred by student and adapted these styles of learning as their most favored method of gain of knowledge. Correlating students' learning style preferences and instructional needs also provides a chance of personalized intervention strategies because of better matching between teacher and students.¹⁹ Providing training facilities to medical facilitator to develop better understanding and knowledge of students' favored style of learning can certainly consequence in better reflection and acquisition of knowledge This is in congruence with one of the studies conducted in Saudi Arabia which state that students would be greatly benefitted if tutors and facilitators understood the elements that can be affecting and influencing students' styles of learning.²⁰ Although this is not a first study of its kind in Pakistan, before in 2016 a study conducted in Lahore at University college of medicine & dentistry by Najma Naz, Rehan Ahmed Khan & Gohar Wajid on students learning styles preferences showed interestingly some different results. About 54% students preferred for multi modal style and 46% for the unimodal, with 66% visual & only 18% kinesthetic learners.²¹ While in our study it was only 12% visual and 34% was kinesthetic as a preferred unimodal learning style among the students. In the same region the students' preferences for learning are grossly different. Hence the current study strongly emphasizes upon the efforts to explore the learning styles preferences of the students, by all the medical institutions before the start of their educational programs, as the combination of various styles adapted by the students may be different. To achieve the maximum educational outcome, the teaching methodologies adapted by the institution must be aligned with the learning styles of its learners. Also, there is a need to explore whether preferred styles of learning amongst students vary as they advance from preclinical spiral towards clinical spiral, as most

of the studies including the current study are done on the students from pre-clinical years.

Conclusion

There are different types of learners among the medical undergraduate with diversity of learning styles therefore the facilitators knowledge and understanding of various learning styles of students is mandatory to create a productive learning environment for all students to achieve academic excellence.

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CONFLICT OF INTEREST

Authors declared no conflicts of Interest.

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DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.

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