

ORIGINAL ARTICLE



Preferred Learning Style of Undergraduate Medical Students at Shalamar Medical and Dental College; A Descriptive Study

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ABSTRACT

Background: Teaching methods are approaches and strategies used by educators to impart knowledge, skills, and values to students. While they may vary, according to the difference in curricula and levels of education, their efficiency depends on the type of learning that the method in question brings about.

Objective: Our research aims to investigate the preferred learning style of undergraduate medical students at Shalamar Medical and Dental College.

Methods: A cross-sectional study was carried out at Shalamar Medical and Dental College. A total of 223 students (selected using stratified and systematic sampling) filled out the online questionnaire after giving informed consent. VARK Questionnaire (version 8.01) was used to investigate the learning style of students and a self-designed questionnaire to find their preferred learning style. Data was collected electronically and compiled via Google Forms Software. SPSS was used for analysis of statistical data. The variables collected include the preferred learning styles of students.

Results: Out of 223 participants, 129 (57.8%) were females and 92 (41.3%) were males. Kinaesthetic (55.6%) was found to be the most common learning style followed by aural (22.4%), then visual (21.1%), and lastly reading/writing (0.9%). The majority of students (61%) chose self-learning as their preferred learning style, followed by small group discussions (30.9%), while only 8.1% preferred class lectures.

Conclusion: The favored self-learning was used as a teaching technique, and no significant link was identified between learning style and their preference for teaching methods.

Keywords: Learning Styles, Small group discussion, Class lectures, Self-learning

INTRODUCTION

Teaching methods are approaches and strategies used by educators to impart knowledge, skills, and values to students. While they may vary, according to the difference in curricula and levels of education, their efficiency depends on the type of learning that the method in question brings about. The efficiency of a particular method is heavily influenced by the learning style of the learner it addresses, i.e. the learner's method(s) of gathering, processing, interpreting, organizing, and thinking about information.^{1,2} Understanding medical students' preferred learning styles is vital for optimizing medical education. This research aims to explore how instructional approaches align with diverse learning preferences, offering insights to enhance student engagement and knowledge retention. By identifying effective teaching strategies tailored to individual styles, educators can

improve the efficacy of medical education programs, benefitting both students and the healthcare community at large.

Ganyaupfu investigated the effectiveness of teaching methods (namely Teacher-Centered Methods, Student-Centered Method & Teacher-Student Interactive Method) on student academic performance, and the results demonstrate that the teacher-student interactive method was the most effective, followed by the student-centered method, finally the teacher-centered approach.³ Bhalli's study further argued that interactive lectures were favored the most by the majority of the students, followed by problem-based learning, small group discussions, demonstrations on models, and one-way lectures respectively.⁴ Govender observed that out of the following teaching methods; lectures, group discussions, group assignments, individual assignments, brainstorming,

case study, individual presentation, role play, workshops & seminars, the majority of students favored lectures.⁵

Rezigalla's study targeted unimodal visual(V), aural(A), reading & writing(R), and kinesthetic(K) learning modalities or multimodal combinations of VK, AK, and VR. The study deduced that the majority of students had a unimodal learning pattern and were predominantly aural learners. Among the multimodal learning styles the common preference was AK.⁶ The preferences on learning style may play a pivotal role in improving medical education. Our research aims to investigate the preferred learning style of undergraduate medical students at Shalamar Medical and Dental College. This study allows for a comprehensive analysis of student perspectives. This approach can ultimately enhance the efficiency of the educational system by providing insights into how students perceive and engage with different teaching method. His study aims to improve understanding and contribute to the development of more effective and tailored educational approaches in medical education, ultimately enhancing teaching outcomes and accuracy in educational methodologies.

METHODS

This cross-sectional study was conducted exclusively on undergraduate medical students at Shalamar Medical & Dental College (SMDC), encompassing 1st to 5th-year MBBS students currently enrolled. Approval from the ethical review board of Shalamar Medical and Dental College was obtained before the commencement of the study. The sample size was calculated using Open Epi, version 3, an open-source calculator, based on the total population of medical students in SMDC, at 50% frequency of outcome factor with a 95% confidence limit. The sample was then divided into 5 strata based on the year of study i.e., from first year MBBS to final year MBBS, using stratified sampling. Students were selected from each stratum with the help of systematic sampling. A total of 223 students participated in this research after taking informed consent.

Procedure: This study was carried out via an online survey. The data collection team sent the link of the online questionnaire to the participants. Participants had to submit an online consent before accessing to the questionnaire ensuring voluntary participation. Data was then collected electronically, compiled via Google Forms Software, then converted to Excel sheet format and analyzed using SPSS software version 23.

The confidentiality of students was maintained throughout this approach, with no personal or identifiable data included, and the material remained inaccessible to anybody other than the research team.

Questionnaire: The instrument used for the data collection was a closed-ended modified questionnaire. The questionnaire was split into two sections:

- a) The VARK Questionnaire (version 8.01), a validated questionnaire that helps to uncover the learning patterns of students, namely visual, aural, reading/writing, and kinesthetic. A study conducted by Fitkov-Norris indicates the questionnaire's usefulness and reliability as a tool for assessing learners' preferences for receiving and processing information in Visual, Auditory, Read/Write, and Kinesthetic modes.⁷
- b) A self-designed questionnaire prepared by the research team to find out the preferred teaching method of the participants. This was tested by conducting a pilot study among the 6 members of the research team under the guidance of their mentor and after a consensus, it was decided to be used.

The significance of adding previous education to the questionnaire was to identify the difference between students from BISE backgrounds and those who have done O/A Levels.

Statistical Data Analysis: Google Forms Software and SPSS were used for data analysis. The statistical method that was used to determine the association between learning styles and preferred teaching methods is the Chi-Square Test.

RESULTS

Out of 223 participants, 129 (57.8%) are females, 92 (41.3%) are males and 2 prefer not to say gender. Of the participants, 37 (16.6%) are from 1st year, 58 (26%) from 2nd year, 45 (20.2%) from 3rd year, 50 (22.4%) from 4th year, and 33 (14.8%) from 5th year. Most of the students have the preferred learning style of kinaesthetic (55.6%), with aural 22.4%, visual 21.1%, and read/write (0.9%) being less preferred (Figure-1,2,3). At the same time, self-learning is the most preferred method of teaching (61%). Small group discussion is preferred by 30.9% of students, and class lecture is preferred by only 8.1%.

Out of 129 females, 73 (39.72%) prefer the learning style of Kinaesthetic, 31 (24.03%) Aural, 23 (17.82%) Visual, and 2 (1.55%) Reading/Writing. Irrespective of their learning style, all of them prefer self-learning to other methods of teaching. Out of 92 males, kinaesthetic is the predominant preferred learning style (51 students or 55.4%), followed by Visual (22 students or 23.91%), and Aural (19 students or 20.65%). It is found that Reading/Writing is not preferred by any male student (Table-1). Kinaesthetic learning style is predominant among both genders, with a slightly higher preference among males. Visual learning style seems equally favored

across genders. Self-learning emerges as the most preferred teaching method for all learning styles, followed by small group discussions, particularly preferred by kinaesthetic learners. Male students exhibit a slightly stronger interest in small group discussions than females. Overall, there is a consistent preference for self-directed learning across all learning styles and genders, with variations in secondary preferences.

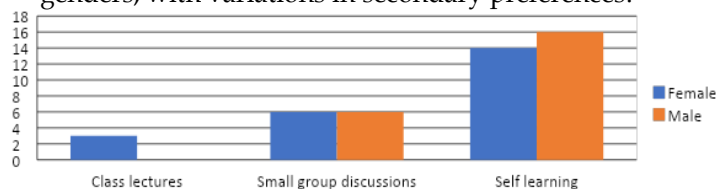


Figure-1: Visual Learning Style among Males and Females

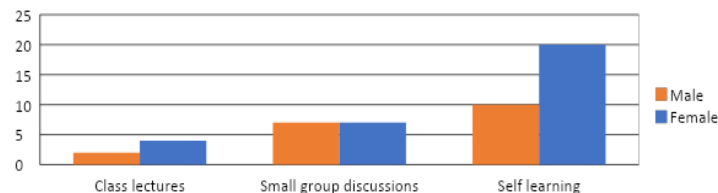


Figure-2: Aural Learning Style among Males and Females

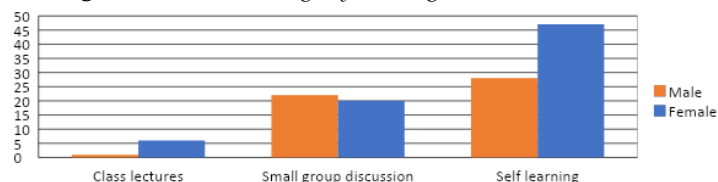


Figure-3: Kinaesthetic style among Males and Females

Table-1: Learning Style * Teaching Method Cross Tabulation							
Gender				Teaching Method			Total
				Class lectures	Small Group Discussion	Self-Learning	
Female	Learning Style	K	Count	6	20	47	73
			% within Learning Style	8.2%	27.4%	64.4%	100.0%
		A	Count	4	7	20	31
			% within Learning Style	12.9%	22.6%	64.5%	100.0%
		R	Count	0	1	1	2
			% within Learning Style	0.0%	50.0%	50.0%	100.0%
		V	Count	3	6	14	23
			% within Learning Style	13.0%	26.1%	60.9%	100.0%
	Total		Count	13	34	82	129
			% within Learning Style	10.1%	26.4%	63.6%	100.0%
Male	Learning Style	K	Count	1	22	28	51
			% within Learning Style	2.0%	43.1%	54.9%	100.0%
		A	Count	2	7	10	19
			% within Learning Style	10.5%	36.8%	52.6%	100.0%
		V	Count	0	6	16	22
			% within Learning Style	0.0%	27.3%	72.7%	100.0%
	Total		Count	3	35	54	92
			% within Learning Style	3.3%	38.0%	58.7%	100.0%
Prefer not to say	Learning Style	V	Count	2			2
			% within Learning Style	100.0%			100.0%
	Total		Count	2			2
			% within Learning Style	100.0%			100.0%

DISCUSSION:

The study aimed to investigate that medical students' learning styles and their preferred teaching methods. The results indicate that the teaching method preferred is not influenced by the learning style of students. The data shows a similar preference for teaching methods in both males and females irrespective of their learning style.

The majority of pupils favored kinaesthetic learning, followed by aural and visual modalities, with read/write coming in last. When it comes to instructional approaches, self-learning came out on top, followed by small group discussions, while class lectures came in last. This is supported by following studies. A study conducted at the Clinical Skills and Simulation Centre, International Medical University, Kuala Lumpur, Malaysia revealed majority of students (30.1%) are of kinaesthetic type.⁸ Another study conducted in Pakistan revealed that most students preferred kinaesthetic and visual learning styles; this study also made an alarming revelation that 78% of medical students are dissatisfied with their teacher's style.^{9,13} A study carried out at Taibah University, Madinah Saudi Arabia, supporting our results showed that 41% of males and 42% of females prefer kinaesthetic as their learning style.¹⁰

The learner's method of gathering, processing, interpreting, organizing, and thinking about information does not affect preference of teaching method which may contradict some of the previous studies^(1,2). A study by Muhammad Asif Bhalli supported our study. It revealed that 46.8% of the medical students were reflectors and 27.3% had a pragmatist learning style. Most of them had interactive lectures (28.57%) and problem-based learning (25.98%) as their preferred teaching method.

Our study signifies that irrespective of their learning style all students prefer self-learning which points towards the fact that students are not benefitting much from the teaching done at medical colleges and prefer to do self-learning. This is also supported by a study showing that 78% of the students were dissatisfied with their teacher's instruction style.¹¹

These findings, which are backed by earlier research, suggest that there is a need to improve the current educational system by making it more constructive and potentially improving the benefit of teaching by moving towards a more self-learning. In the realm of future academic pursuits, a pivotal focus should be directed towards dissecting and addressing inherent difficulties within the education system, with a specific emphasis on challenges associated with the teaching process. The intricate analysis of these issues can serve as a cornerstone for comprehensive research articles, providing a nuanced understanding of the intricacies involved. By delving into

the complexities of teaching-related problems, researchers can unravel key insights that hold the potential to catalyze transformative improvements within the broader education system. Consequently, the ripple effect of such enhancements is anticipated to manifest in elevated student performance, establishing a consequential link between targeted research endeavors and positive educational outcomes. This analytical approach not only illuminates the importance of investigating teaching challenges but also underscores the potential for substantial contributions towards an overarching advancement in the field of education. There are a few limitations to this study since the different factors that influenced student's preference for a specific teaching method were not taken into consideration. Data was collected from only one medical college and much more diversity in data could have shown more accurate results.

CONCLUSION

In conclusion, a discernible trend emerges as the majority of students express a proclivity for kinesthetic learning and self-directed educational pathways, displaying a preference over small group discussions and conventional class lectures. This prevailing inclination underscores the necessity for a strategic reevaluation of educational practices. To optimize the efficacy of our education systems, a deliberate emphasis on accommodating self-learning methodologies is imperative. Recognizing and integrating these predominant learning preferences into pedagogical strategies holds the potential for substantial improvements in educational outcomes. Thus, it is evident that a forward-looking approach that aligns teaching methods with the prevalent student learning styles is instrumental in fostering a more effective and impactful educational landscape for the benefit of successive generations.

CONFLICT OF INTEREST / DISCLOSURE

Nil.

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