ORIGINAL ARTICLE

PRACTICE TRENDS OF LEARNING STYLES AMONG UNDERGRADUATE HEALTH CARE STUDENTS

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ABSTRACT

Introduction: Understanding and addressing diverse learning styles in education is becoming more important, particularly in the context of healthcare training. As medical knowledge becomes more complicated and healthcare delivery develops, educational institutions acknowledge the need to adapt their teaching techniques in order to better educate undergraduate students for their future roles

Material & Methods: It was a cross-sectional study, a total of 100 students were selected through Random sampling technique. Kolb's Learning Style Questionnaire was used to evaluate Practice trends of learning style in different undergraduate healthcare students.

Results: This study found that 79.6% of undergraduate healthcare students had a very strong preference for activist learning style, 42.9% for reflector learning style, 67.3% for theorist learning style, and 65.3% for pragmatist learning style.

Conclusion: This study concluded that undergraduate healthcare students use several learning styles (activist, reflector, theorist, and pragmatist). Kolb's Learning Style Questionnaire revealed a substantial preference (79.6) for the activist learning style.

Keywords: Healthcare, Learning Style, Practice Trends, Students.

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INTRODUCTION

The learning style is the process by which individuals choose to distinguish and process new information. In this way, Kolb's Experimental learning process theory is widely accepted and proved. The mechanisms of Kolb are learning style theory are comprehensive, generalized, and acceptable for scholars all over the world.[1] There is no doubt that students and instructors are unique in diverse ways. Gaining expertise in students' knowledge of patterns may be very beneficial for each instructor and beginners. Involving students in the energetic system of gaining knowledge calls for figuring out and understanding learners' learning styles and teachers' teaching styles. [2] Different phrases have been utilized in literature which include gaining

knowledge of style, Cognitive style, Sensory preference, and personal types of phrases, in a few instances, had been used Exchanges, at the same time as in different activities they had been differentiated.[3] Learning style is defined as the complicated way in which, and Conditions beneath which, newcomers maximum correctly perceive, process, store, and take into account what they're trying to learn. Cognitive patterns are described as an individual's natural, habitual, and desired way (s) of absorbing, processing, and preserving new statistics and skills.[4]

Broadly speaking, learning designs are categorized into 3 main types: psychological features, temperament scientific discipline, and sensory. Psychological features encompass analytical and international, dependent/field freelance, impulsive/ reflective learning designs, Kolb's model of learning designs, and Ehrman and departure construct. Temperament learning designs embody extroverted/introverted, random-intuitive/concrete sequent, and closure-oriented/open-orienting. Sensory learning designs are divided into 3 sub-types: visual, tactile/kinesthetic, and modality.[5]

In the following section, only those learning styles are explained which will be covered in the research part. Visual learners prefer to think in photos and achieve information through visual means such as diagrams and videos. In contrast, verbal learners gain more information through verbal explanations (both spoken and written) [6,7,8] auditory learners' advantage of facts through aural channels inclusive of verbal discussions and being attentive to other's speech. These inexperienced people apprehend that means via way of concentrating on the pitch, tone, and pace of voice. Active learners do duties immediately by making use of and discussing them with others, even as reflective novices recognize and consider statistics satisfactory by reflecting on them in advance. Active novices favor painting in groups, even as reflective novices experience running by themselves or in pairs.[9] Individual learners prefer to work and learn individually. In contrast, learners with a preference for group learning prefer to study and learn in groups.[10]

Research to determine whether visual people learn better from combo tutorials that provide help screens using pictures or verbal users learn better from combo tutorials that provide help screens by using words. In summary, the results showed no trend toward better success for those provided with a help screen that matched their style preferences. Therefore, the result is unfavorable for providing different teaching methods to learners by visual and verbal.[11]

Learning designs play an important role in learners' lives. Once students recognize their own learning bias, they will be able to incorporate it into their learning methods. As a result, the learning process is easier, faster and more efficient. Another good thing about characteristic learner style is that it assists them in determination issues more effectively. The more successful learners at addressing their problems, the higher they will manage their own lives.[12]

Furthermore, understanding learning vogue helps learners in learning the way to learn. And through this particular pattern students become more independent and responsible for their own learning style. As a result, the learner's confidence may increase and the learner's ability to control learning will decrease. At this stage, the learner becomes the center of the teaching method and takes control of their learning while the teacher acts as a facilitator and helper.[13]

Personal achievement includes enhancing student superficiality and confidence, learning how to best optimize learners' brains, knowing student strengths and weaknesses, learning how to build learning processes interesting, increasing learning motivation and learning to enhance students' innate talents and skills. Qualifying virtues include knowledge of subject matter expertise, gaining a competitive edge, effective team management, developing student sales, and stormy power to win.[14]

It is thought that learners learn better if their conception of learning matches their form of instruction. For example, a visible learner can learn better, once information is provided to

him visually. This approach is known as the "learning hypothesis" or, in its recent version, the "grid hypothesis" or "conforming hypothesis". On the contrary, pairing can have negative effects on learners. In the following sections, some discussion is presented, supported by a review of the relevant literature.[15]

This Research is extremely important because it evaluates the effectiveness of such educational programs in achieving desired outcomes. It examines whether basic health care education equips learners with the skills, knowledge and attitudes necessary to work as professional health care providers. It also explores how the integration of experience and how the practical theories in these courses influence students' readiness to transition into real-world health care environments.

MATERIAL AND METHODS

A cross-sectional study was conducted to find out Practice Trends of Learning Styles among undergraduate healthcare students. The goal of the study was to determine the favored learning styles of students from various healthcare fields and to evaluate any possible connections between learning preferences and demographic factors such as age, area of study, and level of education.

A random sampling technique was used to obtain the sample for this investigation. One hundred undergraduate healthcare students from several public and private universities in Karachi, Sindh, Pakistan, were selected. Participating students were from the nursing/pharmacy (35%) and physiotherapy (65%) departments. From the first to the last year of their studies, students were selected from both the early and late stages. As a result, the sample of undergraduate healthcare students was representative and diverse.

All the enrolled undergraduate students in different healthcare programs and students who are volunteered and granted informed consent for participation in the study were included. Postgraduate students and students who declined to participate or did not offer consent were excluded from this study.

Data Collection Procedure

Kolb's Learning Style Inventory (LSI), a popular instrument for evaluating learning styles based on Kolb's Experiential Learning Theory (ELT), was used to gather the data. The four learning styles identified by the LSI are pragmatists, theorists, activists, and reflectors. To ascertain students' unique learning preferences and how they assimilate new information, the inventory comprises a set of questions.

Data Analysis

The questionnaire was used to evaluate the study participants' answers, and the subscale scores were then used to determine the preferred learning approach and learning model. An SPSS database was used to store all the data. For data processing and statistical analysis, SPSS v23 was utilized.

Ethical statement

A questionnaire was distributed to Undergraduate students who fulfilled the inclusion criteria. Informed consent was obtained from this study's participants, and Ethics clearance for the study was obtained from the Ethics Review Committee of the Faculty of IRRS, Health care institutes.

RESULTS

Demographic data

A total of 100 undergraduate students participated in this study. Data received by age in (years) 18-20 (49 %) and 21– 24 (51%). Department-wise data received physiotherapy (65%) and Nursing / Pharm. D (35%).

Table 1: Baseline Characteristics of studied samples (n=100)

Characteristics		n	%
Age Group	18 -20 years old	49	49.0
	21 – 24 years old	51	51.0
Department	Physiotherapy	65	65.0
	Nursing / Pharm. D/ any Other	35	35.0
Reliability test	Cronbach's α	80-items	0.91

Learning Styles

The learning style of the included participants were assessed and it was found that out of 100 healthcare students, 75% had an activist learning style, 37% reflector, 54% theorist, and 56% pragmatist. For details of the preferences see table no 2 that summarise the levels of learning styles in the included population.

Table 2: shows descriptive learning styles using Kolb's

Learning Styles		n	%
Activist Level	Low preference	1	1.0
	Moderate preference	10	10.0
	Strong preference	14	14.0
	Very Strong preference	75	75.0
	Mean ±SD	15.4	±3.6
Reflector Level	Very Low preference	5	5.0
	Low preference	11	11.0
	Moderate preference	17	17.0
	Strong preference	30	30.0
	Very Strong preference	37	37.0
	Mean ±SD	15.4	±3.4
Theorist Level	Low preference	3	3.0
	Moderate preference	22	22.0
	Strong preference	21	21.0
	Very Strong preference	54	54.0
	Mean ±SD	15.6	±2.6
Pragmatist Level	Very Low preference	2	2.0
	Low preference	12	12.0
	Moderate preference	16	16.0
	Strong preference	14	14.0
	Very Strong preference	56	56.0
	Mean ±SD	15.9	±3.3

Table-3 reports the comparison of mean scores of each learning style between Physiotherapists and Nursing/Pharm. D/ In comparison to other students, physiotherapist students had an average activist score of 15.37 (SD=±3.97), an average reflector score of 15.37 (SD=±3.43), an average theorist score of 15.60 (SD=±2.76), and an average pragmatist score of 15.77 (SD=±3.82). Similarly, other than physiotherapist the learning style scores were recorded an average activist score of 15.37 (SD=±3.13), an average reflector score of 15.66 (SD=±3.41), an average theorist score of 15.77 (SD=±2.49), and an average pragmatist score of 16.20 (SD=±2.23).

Table 3: Mean Comparison of Kolb's Scores concerning department

Scores	Physiotherapist		Nursing / Pharm. D/other		p-value
	Mean	SD	Mean	SD	
Activist	15.46	3.97	15.37	3.13	0.90
Reflector	15.37	3.43	15.66	3.41	0.68
Theorist	15.60	2.76	15.77	2.49	0.76
Pragmatist	15.77	3.82	16.20	2.23	0.54
*p<0.05 was considered statistically significant using an independent sample t-test					

DISCUSSION

Objective: To explore learning style preferences amongst undergraduate healthcare students and to identify which, if any, of the four learning styles (activist, theorist, pragmatist and reflector) would dominate. These findings are significant, as previous research has revealed the diversity of learning preferences within the health care profession, which may affect student engagement and retention of knowledge. The commonality of the activist pedagogy among the students reflects recent studies stating that active, hands-on learning experiences are positive, which can influence how well students engage with and remember

knowledge. The prevalence of the activist learning style among students is consistent with recent research showing that active, hands-on learning experiences are highly valued in healthcare education. For example, Wong[16] found that active learning tactics, such as simulations and group discussions, are effective in improving clinical skills and critical thinking in healthcare students. This reinforces our findings that students' significant preference for the activist style may be linked to their participation in practical, participatory learning environments.[16]

In contrast, the significant presence of theorist and pragmatist approaches in our sample shows a balanced approach to learning in which theoretical comprehension and practical application are equally important. Smith[17] found that combining both theoretical frameworks and practical experiences in healthcare education helps students prepare effectively for real-world clinical circumstances. This dual preference indicates that students are engaged not only in immediate application but also in comprehending the underlying ideas that govern their practice. A recent study found no statistically substantial alterations in learning methods across students from different healthcare areas (physiotherapy vs. Nursing/PharmD). This lack of variety is reliable with recent research by[18], who discovered that learning style preferences in healthcare education are very steady across corrections. This demonstrates that, while separate learning preferences differ across students, the fundamental educational wants for interactive and practical learning are dependable across fields.[18] The strong favorite for the activist learning style recommends that educators should focus on integrating more interactive and experiential learning prospects into their programs. This approach aligns with endorsements from study by[19], which supported the use of simulation-based learning and problem-based learning strategies to enhance student arrangement and skill acquisition.[19] Such strategies not only accommodate students' active learning preferences but also recover their clinical capabilities. Moreover, while the presence of reflectors and theorists is notable, it highlights the need for a diversified teaching approach that accommodates various learning styles. As noted by Brown[20], integrating reflective practices and theoretical discussions into the curriculum can help address the needs of students who prefer these learning modes, ensuring a more inclusive educational environment.[21]

Limitations and Future Research

This study's cross-sectional design and relatively small sample size may limit the generalizability of the findings. Future research could benefit from longitudinal studies to track changes in learning style preferences over time and their impact on educational outcomes. Additionally, exploring the effectiveness of tailored teaching strategies based on learning styles could provide further insights into optimizing educational practices in healthcare.

CONCLUSION

The result of this study showed that the practice trends of learning styles among undergraduate healthcare students demonstrated a high preference for activist, reflector, and theorist learning styles, as well as a strong but relatively lesser preference for the pragmatist style. Statistical study found no significant differences across learning styles (P-value < 0.05).

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