LEARNING STYLES OF MEDICAL STUDENTS AND THEIR DEMOGRAPHIC CHARACTERISTICS

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ABSTRACT

Background: Learning styles are different ways of collecting information. Every individual has a different learning style which can be measured by using different inventories. **Objective:** To determine the learning styles of the third year medical students in Sheikh Zayed Medical College Rahim Yar Khan and to find association of learning styles with the demographic characteristics. **Material & Methods:** This cross sectional study was conducted at Sheikh Zayed Medical College Rahim Yar Khan during May 2013 and target population was 3rd year medical students including all the medical students of third year MBBS to analyse learning styles. The instrument used was the "Kolb Learning Style Inventory" which divides the individuals in to four different types of learning styles. The results were tabulated & were analysed by using SPSS version 17. **Results:** Analysis of learning styles inventory showed that among third year medical students, the dominant learning style was convergent learning style as 42 out of 122 (34.4%) students' opted for it. The second, third and fourth preferred learning styles were accommodative 33 (27%), assimilative 25(20.5%) and divergent 24(19.7%) respectively. **Conclusion:** The dominant learning style was convergent among 3rd year medical students and there was significant association of learning styles with demographic characteristics.

Keywords: Learning style, Medical Students, Demographics.

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INTRODUCTION

In 1960 Rita Dunn used the term of "learning styles" for the first time to define the different ways of collecting, recalling and remembering the information.[1] These styles may be habitual or acquired in different learning situations and varies from one to other individual. This concept of individualized learning process originated in 1970s[2], which led to introduction of different measuring instruments of the learning styles i.e Honey and Mumford learning style inventory, Vark learning style inventory and Kolb's learning style inventory.[3,4] Kolb's learning style (KSI) inventory is based on learner past experience, his social environment and genetic characteristics and is the most common instrument to identify the learning styles of undergraduate medical students.[4] He classified the learning styles into converging, diverging, assimilating, and accommodating groups.[4] The "learning style inventory" are statements to which the participants answer by ranking them in numbers & addition of the ranked numbers categorized the learning style of the individual as follow; Diverging: Exhibits strength in imaginative ability and performs well in situations of "brainstorming", and enjoys broad cultural interests i.e humanities and liberal arts. Assimilating: Enjoy creating theoretical models & place importance in theory and logic, less interested in people & more concerned with abstract concepts i.e Research and Planning. Converging: Enjoys the practical application of ideas and uses hypothetical-deductive reasoning, remaining relatively unemotional and preferring to deal with things rather than people i.e engineering and high technical fields. Accommodating: Enjoys doing things and being involved in new experiences, takes risks, and excels where one must adapt to specific immediate circumstances but may be seen as impatient and pushy i.e action-oriented jobs like marketing or sales.

All the learning styles are different from one another in their characteristics and have different strengths and weaknesses.[4] By knowing the learning styles of the learners in the institutions, instructional strategies can be modified to improve the efficiency of the students.[5]

Though there is enormous research work on the learning styles of undergraduate and postgraduate medical students, yet their relevance to medical education has often been questioned.[6-9,10-18,19,20]

Most research conclude that "learning style" is fixed characteristic of the students by ignoring the issues like change in learning styles and the effect of

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contextual and social variables on learning style. One of the studies carried out on postgraduate and undergraduate students in Pakistan has concluded that the learning styles of postgraduate is different from undergraduate.[21]

However there is no study to find the impact of demographic characteristics of individual students on the learning styles. Thus we think that finding the definite correlation of demographic characteristics with the learning styles will contribute to medical education because it can be used as predictors of learning styles and help medical schools to redesign their instructional strategies accordingly. The objective of this study was to determine the learning styles of the third year MBBS students in Sheikh Zayed Medical College Rahim Yar Khan and to find association of learning styles with the demographic characteristics.

MATERIAL & METHODS

The cross sectional study was conducted at Sheikh Zayed Medical College, Rahim Yar Khan in May 2013 and study population was all the medical students of third year to analyse learning styles. The instrument used was the "Kolb Learning Style Inventory" which divides the individuals into four different types of learning styles. The demographic questionnaire (DQ) consisted of questions asking student's gender, high school, parents' educational background, living area and socioeconomic status to investigate any possible associations between learning styles and demographic characteristics.

After informed consent, the learning style inventory and demographic questionnaire were distributed to the third year students in the lecture room which were required to fill and submit back after 20 minutes without showing their identity. The results were tabulated & were analysed by using SPSS version 17.

RESULTS

The collected data showed that out of total 122 students, 50(41%) were male and 72(59%) were female students as shown in Table I. The parent's education data showed that parents of 9(7%) students were metric pass, 26(21%) were undergraduates, 57(47%) were graduates and 30(25%) were postgraduates. (Table I)

Table I: Frequency of Demographic Characteristics

Demographic Characteristics	Frequency	% age
Gender		
Males	50	41
Females	72	59
Residential Status		
Boarding	114	93.4
Day scholar	8	6.6
Parents education		
Matriculation	9	7
Undergraduate	26	21
Graduate	57	47
Postgraduate	30	25
Socio economic status		
Lower middle	4	3
Middle	68	56
Upper middle	40	33
Rich	10	8

The socioeconomic data showed that only 4 (3%) and 10(8%) students belonged to lower middle and rich group respectively while 68(56%) and 40(30%) belonged to middle and upper middle class respectively. Out of 122, only 8(6.6%) students were day scholars whereas 114 (93.4%) students were living in the boarding house. (Table I)

Analysis of learning styles inventory showed that among third year medical students, the dominant learning style was convergent learning style as 42 out of 122 (34.4%) students' opted for it. The second, third and fourth preferred learning styles were accommodative 33 (27%), assimilative 25 (20.5%) and divergent 24 (19.7%) respectively as shown in tables II, III, IV and V.

Table II: Frequency of divergent learning style of 3rd year medical students

Preference	Frequency	Percentage
1st preference	24	19.7%
2nd preference	30	24.6%
3rd preference	35	28.7%
4th preference	33	27.0%
Total	122	100%

Table III: Frequency of assimilative learning style of 3rd year medical students

Preference	Frequency	Percentage
1st preference	25	20.5%
2nd preference	33	27.0%
3rd preference	26	21.3%
4th preference	38	31.2%
Total	122	100%

Table IV: Frequency of convergent learning style of 3rd year medical students

Preference	Frequency	Percentage
1st preference	42	34.4%
2nd preference	27	22.1%
3rd preference	31	25.4%
4th preference	22	18.1%
Total	122	100%

Table V: Frequency of accommodative learning style of 3rd year medical students

Preference	Frequency	Percentage
1st preference	33	27.0%
2nd preference	32	26.2%
3rd preference	29	23.8%
4th preference	28	23.0%
Total	122	100%

There was significant association of parental education, socioeconomic status, residential status with learning styles (p value < 0.05).

DISCUSSION

Different learning styles among the individuals show how one individual learns differently from another individual, it never shows that one learning style is better than the other. Every individual have one dominant and some other (less dominant) learning styles. Understanding the commonalties and differences between our learning style and the learning styles of the people around us is useful for effective communication. It can also give us an idea of our strengths and guide us in selection of our fields of interest. So knowing the learning styles of the students would be a great help to organize the educational programs. Another benefit of identifying the learning styles of the medical students is that they can realize their strengths and weaknesses and bring the improvement to make them more successful. In this way the medical college can achieve its goals in a better way.[22,23] During the five years course of MBBS, third year is the period characterized by the progressive incorporation of teaching and evaluation methodologies that require active student participation and development of interpersonal skills.[24] In a study on 3rd year female students, 34% were convergent and 34% were accommodators while majority of male students were convergent.[24]

The results showed that there was statistically significant correlation between different "learning styles" with specific demographic characteristics. In contrary to our study, Hoover TS and Marshall TT conducted a study on "comparison of learning styles and demographic characteristics of students enrolled in selected animal science courses" and found that there was no difference in learning styles in male and female students by gender, but they found difference in learning styles among students belonging to urban and rural areas. "Students from rural areas preferred a field-dependent learning style (global) and students from suburban or urban areas were more likely to prefer a field-independent style."[25]

The correlation between demographics and learning style has several unclear areas. Some studies suggest there is a correlation between ethnicity and learning styles. However, other studies show that there is no statistical significance between the two.[25] Thus, more research should be done on the subject. Similarly, gender and learning styles have shown some correlation but not significant enough to draw a solid conclusion.[21] This brings more questions than answers. Over all, more research could be done on the subject of learning styles.

CONCLUSION

In this study, the most dominant learning style of 3rd year medical students was the convergent. It is recommended that every institution should measure the learning styles of each class. By identifying the learning styles of the students, the facilitators can plan and implement instructional strategies suitable for the specific learning styles to enhance the learning of the students. There was significant association between parental education, socioeconomic status, residential status and learning styles.

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