

Association of Premedical Educational Background with Self-Directed Learning Readiness Amongst Medical Students of Pakistan

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Abstract

Background :To find association of intermediate level educational background with self directed learning readiness amongst medical students.

Method:A descriptive, cross sectional study done in four public medical colleges of all provinces of Pakistan to find the association of intermediate level background with self-directed learning readiness. A total of 400 students of 1st year were administered a questionnaire pertaining questions regarding demographic and educational background, followed by 40 item SDL readiness scale comprising of responses according to 5 point Likert scale. Three components of self-directed learning, desire for learning, self-control and self-management were compared with premedical educational background.

Results: The total scores and each subscale i.e. self-management (13 items), desire for learning (12 items) and self-control (15 items) were compared with educational background of medical students. No statistically significant difference seen except in few specific questions showing significant difference in the students came from FSC/A level educational background.

Conclusion:Overall no significant difference seen among students with premedical background of A levels and FSC for their self directed learning readiness.

Keywords: Self-directed learning readiness, Self-control, Self-management.

Introduction

With rapid scientific growth in health sector, the need for medical student is to be able updated with new knowledge. They must know, how to recognize their deficiencies, outline their learning objectives, choice their recourses, search for knowledge, self

manage and evaluate their learning for their best professional skills.¹⁻³

In the developed countries, medical schools have either revised or developed new curriculum to move from traditional to self-directed learning strategies. SDL is need of students in higher education and is well-established concept in adult education. It describes that an anagogical learning prefers to take responsibility, motivated, use his/her experience and know how to manage the things.⁴⁻⁶

As we want to implement integrated curriculum, which is, based on self-directed learning for students who came with traditional teacher centered premedical education system. In Pakistan students at premedical/intermediate level came from two educational backgrounds, FSC (faculty of science) and A (advanced levels) Levels. O and A levels are comprehensive and activity based while matric and FSC are mostly notes based. It is considered that local inter students (FSC) can not clear their basic concepts while Cambridge students are taught up to date conceptual syllabus. Both are traditional systems, which are teacher centered and passion is to take notes and recall based examination system but examination pattern is different in both. Now it is important to analyze that the student with which background are more efficient self-directed learners.⁷ Objective is aimed to assess the association of both systems with SDLR. Is there any difference in readiness for self-directed learning between students from FSC and A levels. Whether students from FSC or A levels have impact on their readiness for self directed learning, which they will face at medical schools educational systems now. No studies have been conducted to find out answers to this paradigm. So it is important to assess the current level of SDL in medical students in all the three domains, self-control, desire to learn and self-management to find association with premedical background, which exists in Pakistan. All three

domains were analyzed with reference to educational background.⁸⁻¹⁰

Nationally studies are there, to compare the academic performances with premedical educations and entry test scores but no study was found to assess their level of responsibility motivation and management as well as association of these with their educational backgrounds prevailing in Pakistan. One of study in Australia 'how do Australian doctors with different premedical school background perform as intern: no significant difference seen to previous educational background or degree, subjects studied at secondary school.^{13,14}

Subjects and Methods

The study was conducted at 4 public medical colleges from all provinces of Pakistan namely; Rawalpindi Medical College (RMC), Rawalpindi. Bolan Medical College (BMC) Quetta. Jamshoro Medical College (JMC) Karachi and Khyber Medical College (KMC) Peshawar. In all these public sector medical colleges. Data from 100 students from each medical college was collected. Random sampling technique applied to collect data from a population to choose a subset with equal probability of being chosen. Inclusion criteria was newly inducted first year Medical students, from both backgrounds FSC and A-levels. The proformas were structured, comprising of information regarding demographic and educational characteristics followed by items/parameters of self-directed learning readiness scale named fisher's scale.^{6,7,8} Special permission was taken from Mr. Fisher M, Associate Professor, and Faculty of Nursing at the University of Sydney, Australia whose team developed this tool. This SDL readiness scale is 40 items based questionnaire based on Likert scale starting from 1 (Strongly disagree), 2 (disagree), 3 (unsure), 4 (agree), 5 (strongly agree). The tool has been developed to cover the basis of self-directed learning and measure all aspects like self-management, desire for learning and self-control of students at undergraduate level. After reversing the score of 4 items as advised by Mr. Murray Fisher, simply scores are analyzed to get total score and subscale, according to article nurse today 2001 was advised to use. Anova applied to find the difference in all the three domains of self-directed readiness in students coming from different premedical educational background. Self control, desire for learning and self-management were assessed to find out difference between the students in these three components. Detailed analysis of all the

items done also to assess p value and 0.05 and more were taken as borderline.

Results

Association of SDLR Learning with premedical educational background was established. When the mean score of SDL component were compared based on educational background no Statistically Significant difference found (Table 1). Two individual items/parameters were significantly associated with premedical educational background in terms of student's readiness of SDL (Table 2).

Table 1: Association of SDLR Learning with premedical educational background

Education Background	Mean± SD	P-Value
FSc	46.64±5.14	.155
A Level	46.90±3.31	
FSc	48.60±5.69	.926
A Level	46.80±5.71	
FSc	42.75±4.78	.116
A Level	43.10±2.60	
FSc	156.73±16.85	.136
A Level	160.1±11	
Education Background	Mean± SD	P-Value
FSc	46.64±5.14	.155
A Level	46.90±3.31	
FSc	48.60±5.69	.926
A Level	46.80±5.71	
FSc	42.75±4.78	.116
A Level	43.10±2.60	
FSc	156.73±16.85	.136
A Level	160.1±11	

Table 2: Associations of SDL readiness scale average responses according to educational backgrounds

Education	F.Sc. (n=366)	A level (n=34)	t-test (P-value)
I have high personal standards	3.8 ± 0.98	4.2 ± 0.77	0.02
I am aware of my limitations	4.2 + 0.96	3.7 ± 0.90	0.008

Discussion

Self-directed learning is one of the basic characteristics of andragogy, which contributes towards lifelong

learning. Self-directed learning readiness is very crucial for first year medical students to get rid of anxiety and academic failure (Knowles, 1975).¹¹ One of important aspect is the premedical educational background that affects responsibility, motivation and management, which are main components of self-directed learning readiness.¹³⁻¹⁵ Two educational backgrounds at premedical intermediate level are FSC (faculty of science) and A levels(advanced). FSc is a Pakistani system; A-Level is British system of Education. Both systems are good, however, it depends on the candidate that which one will suit him/her the best. Both have some drawbacks and some advantages⁹. According to a study, in A-level system, it is observed that mostly students have good observation, analytical and communication skills. They are also good at presentation skills. While in FSC systems, students are harder working, disciplined, reliable and have better command over the subjects as this system encourages a student to practice hard. Internationally Medical educators are interested in qualifying the relationship between premedical school characteristic and performance in medical school and postgraduate training program.^{16,17} Nationally studies are there, to compare the academic performances with premedical educations and entry test scores but no study was found to assess their level of responsibility motivation and management as well as association of these with their educational backgrounds prevailing in Pakistan.

One of study in Australia 'how do Australian doctors with different premedical school background perform as intern: no significant difference seen to previous educational background or degree, subjects studied at secondary school. Another study by R.A.Kusurkar¹⁸ in which motivation was assessed whether it is useful in predicting and understanding process and outcomes in medical education, in other words motivation is an independent or dependent variable in medical education.⁴ Very interesting result was found that motivation appears as independent variable influencing outcomes and is dependent variable influenced by autonomy, competence and relatedness. Overall it supports self-determination theory. Müllers study to find challenging traditional premedical requirements, predictors of success in medical schools showed that students without the traditional premedical preparation performed at a level equivalent to their premedical classmates.¹⁹⁻²¹

Local studies about comparisons of pre medical academic effects of schooling and parental education on student's achievement in medical entrance tests

with result of 80%students have early private schooling and many more studies related to same objective.^{2,5} My objective was to compare the Self-directed readiness of medical students based on their premedical intermediate board backgrounds that are national FSC and international Cambridge advanced levels.²²⁻²⁴

Conclusion

1. When the mean score of SDL component were compared based on educational background, no Statistically Significant difference found in students from both backgrounds prevailing in Pakistan.
2. Students from both backgrounds are equally ready for self-directed learning. Except when the individual items were compared according to educational background, it was noted that average response to 'I have high personal standards' was significantly high in A level category than F.Sc. (4.2 vs. 3.8-P value 0.02). The average response to item 'I am aware of my limitations' was high in F.Sc. category compared to in A level category (4.2 vs. 3.7-Pvalue 0.008).
3. The present study was perceptions based on self-reported questionnaire. Additional technological based question can substantiate the findings

References

1. Abraham RR, Fisher M, Kamath A, Izzati TA, Nabila S. Exploring first-year undergraduate medical students' self-directed learning readiness to physiology. *Advances in Physiology Education* 2011; 35(4), 393-95.
2. Brockett R G. A response to Brookfield's critical paradigm of self-directed adult learning. *Adult Education Quarterly* 1985; 36, 55-59
3. Corno L. Encouraging students to take responsibility for learning and performance. *Elementary School Journal* 1992; 93, 69-83.
4. Blumberg P. Evaluating the evidence that problem-based learners are self-directed learners: a review of the literature. in Evensen EH & Hmelo CE (eds.), *problem-based learning; a researchperspective on learning interactions* (pp. 199-226). new jersey ,2000: Lawrence Erlbaum associates.
5. Bodkyn C and Stevens F. Self-directed learning, intrinsic motivation and student performance. *Caribbean Teaching Scholar* 2015; 5, 79-93
6. Junaid S K, John SG, Tahira B, Osama M. Medial colleges admission test in Punjab, Pakistan, *J Ayub Med Coll Abbottabad*: 2013;25(1-2)
7. Memon S, Goswami P, Memon IA, Effects of schooling and parental education on student's achievement in medical entrance test . *J Liaquat Uni Med Health Sci.* 2016;15(03):116-20
8. Bonham LA. Guglielmino's self-directed learning readiness scale: What does it measure? *Adult Education Quarterly* 1991; 41, 92-99
9. Artis AB and Harris EG. Self-directed learning and sales force performance: an integrated framework. *Journal of Personal Selling and Sales Management* 2007; 27, 9-24.

10. Brockett RG and Hiemstra R. Self-direction in adult learning: Perspectives on theory, research, and practice. London: Routledge, 1991.
11. Brookfield S. The contribution of Eduard Lindeman to the development of theory and philosophy in adult education. *Adult Education* 1984; 34, 185-96.
12. Cho D and Kwon D. Self-directed learning readiness as an antecedent of organizational commitment: a Korean study. *International Journal of Training and Development* 2005; 9, 140-52.
13. Fisher M, King J, Tague G. Development of a self-directed learning readiness scale for nursing education. *Nurse Education Today* 2001; 21, 516-25
14. Fisher M, King J, Tague G. Development of self-directed learning readiness scale for nurse education. *Nurse Education Today* 2001; 21(7): 516-25
15. Fisher MJ, King J. The self-directed learning readiness scale of nursing education revisited: A confirmatory factor analysis. *Nurse Education Today* 2010; 30(1):44-48
16. Duch B, Gron S, Alen D. (eds) *The power of PBL*. Style publishing, 2001.
17. Greveson GC, Spencer JA. Self-directed learning--the importance of concepts and contexts. *Med Educ* 2005; 39: 348-49.
18. Kusurkar R A, Tenacate TJ, Van A M, Croiset G. Variable in medical education: A review of the literature, 2011;242-62.
19. Muller David MD, Mase, Nathan MD. Challenging traditional premedical requirements as predictors of success in Medical School: The Mount Sinai School of Medicine Humanities and Medicine program. *Academic Medicine* 2010; 85(B): 378-83
20. Delahaye B, Choy S. The learning preference assessment (Self-Directed Learning Readiness Scale). In Maltby, J., Lewis, C. A., & Hill, A. (2000). *Commissioned reviews of 250 psychological tests*. 2000; Edwin Mellen Press, Wales, U.K
21. DeVaus DA. *Surveys in Social Research* 3rd edn 1991.. Allen and Unwin, Sydney, NSW
22. Davis S MH, Harden RM. AMEE Medical Education Guide no 15: *Problem-based learning: a practical guide*. *Medical Teacher* 1999; 21, 130-40
23. Fry J. Interactive relationship between inquisitiveness and student control of instruction. *J Educ Psychology* 1972; 63, 459-65.
24. Glasziou PP, Sawicki PT, Prasad K, Montori VM. *International Society for Evidence-Based Health Care*. (2011) Not a medical course, but a life course. *Acad Med* 2011; 86, e4.