

E-LEARNING AMONG MEDICAL STUDENTS: COMPARISON BETWEEN MEDICAL COLLEGES OF TWO METROPOLITAN CITIES IN PUNJAB

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ABSTRACT

Background: Information and communication technology is a new approach to the teaching and learning process, now widely accepted as a necessary tool for attainment of developmental goals. From traditional blackboard and lectures, education has moved to e-learning. E-learning is a flexible term that refers to the improvement in knowledge and performance through use of computer and internet technologies. **Objective:** To compare the e-learning in medical students of medical colleges of two metropolitan cities of Punjab. **Methodology:** This cross sectional survey was conducted for the final year MBBS students of King Edward Medical University, Lahore (KEMU) and Khawaja Muhammad Safdar Medical College, Sialkot (KMSMC) from 1st January to 30th June 2017. A 5 domain validated questionnaire was used. Students were included by non-probability convenient sampling. A questionnaire was emailed to 210 study participants. A total of 145 students (69% response rate) from both the colleges responded to the questionnaire. Data was entered in SPSS 20 for statistical analysis. Independent sample t-test was applied where data was normal while Mann Whitney U test was applied where data was not normally distributed. **Results:** In this study, a total of 145 students participated. The mean scores for perceived usefulness for e-learning, ease of e-learning, e-learning stressor and e-distance use of e-learning was statistically same in KEMU and KMSMC students. However, the score for intention to adopt for e-learning had statistically higher mean in students of KEMU. (p-value = 0.004) **Conclusion:** Medical students from both the institutions of metropolitan cities recognize the uses of e-learning in medical education and are perceptive to adopt it.

Key words: E-learning, Medical students, Medical education

INTRODUCTION

Information and communication technology is a new approach to the teaching and learning process, now widely accepted as a necessary tool for attainment of developmental goals.¹ From traditional blackboard and lectures, education has moved to e-learning.^{2, 3} E-learning is a flexible term that refers to the improvement in knowledge and performance through use of computer and internet technologies.⁴ E-learning may be defined as “the use of the internet, intranets/extranets, audio and videotape, satellite broadcast, interactive TV, and CD-ROM, not only for content delivery, but also for interaction among participants.¹

There is an increasing awareness that students are making use of their own technology.⁴ Institutions need to be aware of their student's computer literacy and their attitudes towards e-learning, in order to adjust the curriculum so that students are adequately prepared and to maximize their learning experience through usage of new technologies.⁵

E-learning offers number of advantages, which include opportunities for flexible teaching and learning, opportunity for self-directed learning, overcome geographic restrictions, and enhanced capacity for interactive teaching and learning, and

cost effective.^{6,7} Developing countries like Pakistan can be a particular beneficiary from E-learning. World Health Organization (WHO) has also acknowledged the e-learning as a useful tool to address educational needs in healthcare sector in developing countries.^{8,9} Based on this review, this study was planned to compare the e-learning in medical students of medical colleges of two metropolitan cities of Punjab.

METHODOLOGY

This study got approved by ethical review boards. King Edward Medical University (KEMU), situated in metropolitan city of Lahore and Khawaja Muhammad Safdar Medical College (KMSMC), located in metropolitan city of Sialkot. This cross sectional survey was conducted for the final year MBBS students of King Edward Medical University, Lahore and Khawaja Muhammad Safdar Medical College, Sialkot from 1st January to 30th June 2017. The validated questionnaire containing 5 domain and 58 item was used. Students were included by non-probability convenient sampling. The students were explained regarding study protocol and their consent was obtained. A questionnaire was emailed to 210 study participants. A total of 145 students (69% response rate) from both the colleges responded to the questionnaire. Data was entered in SPSS 20 for

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statistical analysis. Independent sample t-test was applied where data was normal while Mann Whitney U test was applied where data was non-normal.

RESULTS

In this study, a total of 145 students participated. Out of total, 100(69%) from KEMU and 45(31%) were participated from KMSMC. The mean score for perceived usefulness for e-learning in KEMU and KMSMC students was 2.57 ± 0.49 and 2.58 ± 0.60 respectively, with no significant difference (p -value = 0.863). The mean intention score to adopt for e-learning in KEMU students was 1.79 ± 0.57 and in KMSMC students was 1.50 ± 0.54 with statistically higher mean in students of KEMU. (p -value = 0.004)

The mean score for ease of e-learning was also statistically same in the students of KEMU (1.80 ± 0.78) and KMSMC (1.56 ± 0.80) (p -value 0.079). The mean e-learning stressor score was 1.75 ± 0.66 in KEMU students and 1.51 ± 0.80 in students of KMSMC with no statistical significance (p -value 0.06). The mean score for e-distance use of e-learning in the students of KEMU was 2.95 ± 0.90 and in KMSMC students as 2.94 ± 0.74 , with insignificant statistical difference (p -value = 0.872). (Table I)

Table I: E-learning Domains & Mean scores

Domain	Institute	Mean	S.D	Minimum	Maximum	P- value
Perceived Usefulness	KEMU (n=100)	2.57	0.49	1.18	4.00	0.863 ^a
	KMSMC (n=45)	2.58	0.61	0.71	4.00	
	Total (n =145)	2.57	0.53	0.71	4.00	
Intention to adopt	KEMU (n=100)	1.79	0.57	0.71	4.00	0.004 ^a
	KMSMC (n=45)	1.50	0.54	0.14	2.86	
	Total (n =145)	1.70	0.58	0.14	4.00	
Ease of Learning	KEMU (n=100)	1.80	0.78	0.00	4.00	0.079 ^a
	KMSMC (n=45)	1.56	0.80	0.00	3.50	
	Total (n =145)	1.73	0.79	0.00	4.00	
E-Learning Stressor	KEMU (n=100)	1.75	0.66	0.00	3.60	0.060 ^a
	KMSMC (n=45)	1.51	0.80	0.00	3.40	
	Total (n =145)	1.68	0.71	0.00	3.60	
E-distant use of E-Learning	KEMU (n=100)	2.95	0.90	0.00	4.00	0.872 ^b
	KMSMC (n=45)	2.94	0.74	0.00	4.00	
	Total (n =145)	2.94	0.85	0.00	4.00	

a. Independent sample t-test was applied (data was normal)

b. Mann Whitney U test was applied (data was non-normal)

DISCUSSION

Our study addressed the e-learning in medical students on a five domain likert scale, addressing

perceived usefulness, intention to adopt, ease of learning, e-learning stressor and distance use e-learning. From this study, it is evident that the students consider e-learning to be very useful and they are willing to adopt it. A study compared the students in Gulf found the similar results.¹⁰ Similar results are reported by Ali et al¹¹ in nursing medical education.

Our study has compared the e-learning in two medical institutes of metropolitan cities. The mean scores for perceived usefulness for e-learning, ease of e-learning, e-learning stressor and e-distance use of e-learning was statistically same in both the institutions. However, the score for intention to adopt for e-learning had statistically higher mean in students of KEMU (p -value = 0.004). This difference may be due to difference in response rate from both the institutions. Distant learning can be used in situation arising from stress of living in remote areas with long distance from home to the learning institute. The students agree that online education should be offered so that students can learn from home avoiding travel related stress and can continue studies after leaving institution. Overall our study shows favorable attitudes of the medical students towards e-learning and shows intention to adopt it, despite of stress factors involved. A study by Elango R and Gudep V shows that the students are ambivalent towards using computers for learning and for patient care.¹² Our study is also supported by a study from Jawaid et al³ from Pakistan and Nihuka et al¹³ from Tanzania suggested that despite limited access to technologies, students have positive perceptions about using e-learning technologies. The study has the limitation of response rate and methodology. To further evaluate the e-learning in medical students, multicenter quantitative and qualitative studies should be conducted.

CONCLUSION

We conclude from our study that medical students from both the institutions of metropolitan cities recognize the uses of e-learning in medical education and are perceptive to adopt it. However, stressors need to be reduced to strengthen its use.

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