Original Article

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A Comparative Analysis of E-book Use among Undergraduate Medical Students with Respect to their Gender

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ABSTRACT

Objectives: To compare the purpose of e-book usage, searching preferences, and type of e-books preferences between the male and female undergraduate medical student.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted in the four Public Sector Medical Colleges in Southern Punjab, Pakistan from August 2016 to December 2016.

Materials and Methods: The population of this study comprised of the first-year enrolled undergraduate medical students of both genders (male and females) in four public sector medical colleges in Southern Punjab, Pakistan.The survey research method was used to collect the data from respondents. The questionnaire was divided into two parts; first part of the questionnaire contains questions related to demographic information of the respondents such as respondents' gender, age and name of college. The second part of the questionnaire comprised of questions such as; purpose of e-book usage, searching preferences, and type of e-books. Pre-determined alpha value is set at 0.05 for this study.

Results: The findings of this study concluded that the purpose of e-book use, preferences in searching, and types of e-book use is the same between the male and female students. They use e-books with the purpose of keeping their knowledge up-to-date, completing class assignment, and for exams preparations. They prefer to search e-books from general search engines (e.g., Google, Yahoo) and they prefer to use textbook as a type of e-books.

Conclusions: There is need to develop awareness about the use of e-books among undergraduate medical students by conducting orientation programs.

Key Words: E-book, use, preferences, medical students, south Punjab, medical libraries

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INTRODUCTION

Technology has a tendency of changing things. Electronic publications are rapidly taking the place of printed materials in personal, professional, and educational collections.[1] Certainly no one expects the printed book to disappear overnight. But in reality, reading habits, information literacy trends and information seeking preferences are changing rapidly in a digital world.[2] Armstrong et al., defined E-book as: 'any piece of electronic text regardless of size or composition (a digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen'.[3]

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One of the largest online book sale networks has recently reported that they are selling more electronic books than the printed version. They revealed that in the year of 2012, they have sold 114 E-books against each 100 printed books.[4] These statistics demonstrate changing habits of people in reading and widespread adoption of e-books. Therefore, since few years, medical libraries have started developing collections in digital forms.[5,6] Libraries attached with medical colleges are constantly expanding the collection of electronic books (e-books), its availability and access round the clock that has caused continues decrease in circulation of printed books.[7,8] Both book publishers and readers have embraced the format of e-book at a larger scale. But librarians endeavor to learn; which book format, print or electronic adds the more value to the library collection, its budget and above all to readers.[9,10]

Publishers began offering E-book in the late 1990s and soon after articles on the prospects of e-books in academic libraries began appearing.[11]One of the major reasons reported in literature for developing e-books collection in libraries was the feasibility of distant users. On the other hand, a comparative study on e-book uses concluded a high percentage of use in off

campus as compared to on campus.[12] One of the major and frequent barriers that have been discussed in literature was the discomfort of screen reading during the use of E-book. But medical students and clinicians commonly use e-book for ready reference. Therefore, screen reading is considered as less of a barrier in adoption of e-book. Many studies concluded that students and faculty members prefer to read only short section of e-book particularly for ready reference but they prefer print version for reading a complete book.[13,14] A comparative study conducted by Ugaz and Resnick[9] between the usages of printed and e-book version of the same title and concluded less circulation of printed version as compared to e-version. On the other hand, many studies concluded that it is hard to make a significant comparison because usage statistics measure different kind of access.[15,16]

Previously no comparative study has been carried out in Pakistan to explore the purpose of e-book usage, searching preferences, and type of e-books with respect to gender. Therefore, the present study was con ducted with an objective to compare purpose of e-book usage, searching preferences, and type of e-books use with respect to gender among the first-year undergraduate medical students.

MATERIALS AND METHODS

The study was conducted in four public sector medical colleges of Southern Punjab, Pakistan i.e., Nishtar Medical College, Multan, Dera Gazi Khan Medical College, Quaid-e-Azam Medical College, Bahawalpur, Sheik Zayed Medical College, Rahim Yar Khan. Each college had a professional librarian and a decent amount of e-books collection in library. The population of the study was first-year enrolled undergraduate medical students of both genders (male and female). A survey method of research was applied to gather the data for this study. Close-ended questionnaire was developed after reviewing the literature and accessing the situation of participating medical colleges, e-books collection in libraries, attitude of first-year undergraduate medical students toward e-books. The questionnaire was divided into two parts; first part of the questionnaire contains questions related to demographic information of the respondents such as respondents' gender, age and name of college. The second part of the questionnaire comprised of questions such as; purpose of e-book usage, searching preferences, and type of e-books. The questionnaire was discussed with librarians of the participating medical colleges. It was revised to incorporate recommended improvements. The questionnaire was distributed among undergraduate medical students by convenient sampling. Medical librarians of the participating medical colleges worked as study facilitators. The major role of facilitators was to lend support to the study within their medical college.

Data was analyzed statistically using Statistical Package for Social Sciences (SPSS v-20). In descriptive statistics, frequency of the categorical variables such as gender, college and age groups was calculated while comparative bar graphs between gender and source of E-books acquiring and satisfaction with the reading of E-books were drawn. In inferential statistics, to compare the E-books usage among undergraduate medical students with respect to their gender (male and female) were measured using independent sample t-test. Categorical variable gender was taken as independent variable and continuous variables such as purpose of e-book usage, searching preferences, and type of e-books were taken as dependent variables in this study. Pre-determined alpha value was set at 0.05 for this study.

RESULTS

The questionnaire was distributed among 290 students of four different medical colleges, 206 questionnaires were returned and valid for this study with a response rate of 71%. Demographic information showed that 114(55.3%) were male and 92(44.7%) were female. Majority of the respondents 200(97.1%) aged between 15 and 20 years, while only 6(2.9%) were between 21 to 25 years. Majority of the respondents 74 (35.9%) were from Nishtar Medical College, Multan, 52(25.2%) were from Dera Gazi Khan Medical College, 45(21.8%) were from Quaid-e-Azam Medical College, Bahawalpur and 35(17%) were from Sheik Zayed Medical College, Rahim Yar Khan. Majority of the respondents 201 (97.5%) used e-books while 5(2.5%) have never used e-books in their life. Of the 5(2.5%) respondents, 4(1.9%) were male and 1(0.4%) was female who have never used E-books.

Table 1 shows that the majority of the respondents use e-books very often for the purpose of "class assignments" (4.05 $\pm$ .917), "up-to-date knowledge" (4.02 $\pm$ .95) and for "exams" (3.75 $\pm$ 1.27). On the other hand, they use e-books sometimes for the purpose of reading "treatment guidelines" (3.19 $\pm$ 1.17) and when "print version of the book is not available" (2.76 $\pm$ 1.27). Statistically no significant difference found between male and female respondents and their purpose of using e-books for keeping their knowledge up-to-date (4.07 vs 3.97, $P > 0.05$), "class assignments" (3.98vs 4.14, $P > 0.05$), "exams" (3.73 vs 3.77, $P > 0.05$) and "print version is not available" (2.73 vs 2.80, $P > 0.05$). On the other hand, significant difference existed between male and female respondents and their purpose of using e-books for treatment guidelines (2.97 vs3.46, $P < 0.05$).

The majority of the respondents always prefer to search e-books from "general search engines" (e.g. Google, Yahoo, etc.) (4.53 $\pm$ .898). On the other hand, they rarely search e-books from "university library catalogue" (2.07 $\pm$ 1.371), "publishers/vendors databases" (2.05 $\pm$ 1.096), and "higher education

commission (HEC) digital library" (1.54 ± 1.024). Statistically, no significant difference existed in the searching preferences of male and female respondents. Both groups always prefer to search e-books from general search engines (4.54 vs 4.51, P > 0.05).

Table No.1 Comparison of E-book Usage with respect to Gender

	Male (n=114)		Female (n=92)			Total (N=206)		
	Mean	**Standard Deviation**	**Mean**	**Standard Deviation**	**Mean Difference**	**Mean**	**Standard Deviation**	**P Value (2-Tailed)**
For What Purpose Do you Use E-books								
Up-to-Date Knowledge	4.07	.993	3.97	.907	.103	4.02	.955	.444
Class Assignments	3.98	1.004	4.14	.793	-.159	4.05	.917	.217
For Exams	3.73	1.339	3.77	1.205	-.044	3.75	1.278	.808
For Treatment Guidelines	2.97	1.333	3.46	.870	-.483	3.19	1.172	.003**
Print Version Not Available	2.73	1.319	2.80	1.234	-.076	2.76	1.279	.672
Where Do you Prefer to Search E-book								
University Library Catalogue	1.99	1.411	2.16	1.320	-.172	2.07	1.371	.372
General Search Engines (e.g. Google, yahoo etc)	4.54	.822	4.51	.989	.033	4.53	.898	.794
Publishers/Venders Websites (e.g. ebrary or Springer link)	2.08	1.220	2.02	.926	.057	2.05	1.096	.711
Higher Education Commission (HEC) Digital Library	1.67	1.165	1.39	.798	.275	1.54	1.024	.055
What Type of E-books Do You Prefer								
Textbooks	3.72	1.069	3.53	1.402	.187	3.64	1.229	.280
Reference Books	3.39	1.616	3.83	1.096	-.440	3.58	1.421	.027*
Fictions	3.10	1.672	3.05	1.409	.042	3.08	1.557	.847
General Books	2.75	1.362	2.51	1.104	.235	2.64	1.256	.183
Drug Guides	2.32	1.319	2.76	1.073	-.445	2.51	1.233	.010*
Technical Books	2.43	1.433	2.61	1.326	-.179	2.51	1.385	.358
Research Monograph	1.82	1.069	2.47	1.288	-.652	2.11	1.213	.000**

Scale: 1=Never, 2=Rarely, 3=Sometimes, 4=Very Often, 5=Always *P < 0.05, **P <0.01

Table No.2: A Comparative Analysis of the Purpose of E-book Usage, Preferences in Searching, Types, Formats and E-Reader and the Advantages and Disadvantages and the Future of E-books with Respect to Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)
Purpose	Male	114	17.4825	3.44934	.32306	-1.491	.137
	Female	92	18.1413	2.73994	.28566		
Searching	Male	114	10.2807	2.56080	.23984	.591	.555
	Female	92	10.0870	2.02540	.21116		
Type	Male	114	19.5088	5.21272	.48822	-1.853	.065
	Female	92	20.7609	4.28739	.44699		

***P < 0.05, **P <0.01**

The majority of the respondents prefer "textbooks" (3.64 ± 1.229) and "reference books" (3.58 ± 1.421) very often as type of e-book for studying. However, they sometimes prefer "fictions" (3.08 ± 1.557), "general books" (2.64 ± 1.256), "drug guides" (2.51 ± 1.233) and "technical books" (2.51 ± 1.385). But they rarely prefer "research monograph" (2.11 ± 1.213). Statistically significant difference found between the two groups of male and female respondents and their preferences in the type of e-books such as "reference books" (3.39 vs 3.83, P < 0.05), "drug guides" (2.32 vs 2.76, P < 0.05) and "research monograph" (1.82 vs 2.47, P < 0.05). On the other hand, no significant difference exists between the mean of two groups and the type of e-books preference such as "textbooks" (3.72 vs 3.53, P > 0.05), "fictions" (3.10 vs 3.05, P > 0.05), "general books" (2.75 vs 2.51, P > 0.05) and "technical books" (2.43 vs 2.61, P > 0.05).

Table 2 shows the overall results of the comparison between two groups of male and female respondents and their purpose of using e-books as (17.48 vs 18.14, P > 0.05). Using Independent sample t-test we found the mean of the two groups is almost equal and the value of sig. (2-tailed) is .137, which is more than predetermined alpha value of this study 0.05. Therefore, the results concluded that the purpose of using e-books is the same between the male and female medical students. Similarly, no significant difference existed in the preferences of searching e-books (10.28 vs 10.08, P >

0.05), and type of e-books use (19.50 vs 20.76, P > 0.05) between male and female respondents.

DISCUSSION

The incorporation of e-books in medical academic libraries is valuable as they are remotely accessible, downloadable and available around the clock. E-books collection can lead to saving physical space in the library, prevention from damage and book lost, and smooth integration to Virtual Learning Environments (VLEs).The results of our study confirmed the findings of other studies that the undergraduate medical students use e-books mainly for the purpose of class assignments and to keep their knowledge up-to-date.[13,17-19] These findings are similar to the findings of landmark survey carried out in UK thatconcluded; themajority 61.8% of the students use e-books for the purpose of class assignments.[14] On the other hand, statistical analysis found no difference between male and female respondents and their purpose of using e-books, except for treatment guidelines, in which, female respondents found more likely to use treatment guidelines than male respondents. Similarly, a very small difference in the purpose of e-books usage between men and women found in a study conducted previously in UK.[14]The finding of this study also concluded that the majority of the students obtained e-books personally or on self bases rather than from library collection.

The findings of this study further concluded no significant difference in the searching preferences of e-books between male and female respondents. Both groups preferred to search e-books from general search engines (e.g. Google, yahoo etc.). These findings are similar with the findings of previous studies.[19,20] The present study concluded that undergraduate medical students prefer textbooks and reference books as type of e-books. Though, significant difference in the preference of reference books as a type of e-book found between male and female respondents. In which the preference of reference books was higher by female respondents than their counterpart male respondents. Similar findings also found previous studies, in which students reported textbooks and reference books as most preferred types of e-book.[1,19,21-22]

CONCLUSION

The findings of this study concluded that the purpose of e-book use, preferences in searching, and types of e-book use is the same between the male and female students. They use e-books with the purpose of keeping their knowledge up-to-date, completing class assignment, and for exams preparations. They prefer to search e-books from general search engines (e.g., Google, Yahoo) and they prefer to use textbook as a type of e-books.

The study recommends that the use of e-books should be promoted among the students in medical colleges in order to promote the information access among the medical students. There is need to develop awareness about the use of e-books among undergraduate medical students by conducting orientation programs.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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