

Utilization of library services by medical students: A comparative analysis of undergraduate and postgraduate students in a medical college

Malangori Abdulgani Parande, Vinay Shridhar Tapare, Pradip S Borle

Department of Community Medicine, B.J. Government Medical College, Pune, Maharashtra, India

Correspondence to: Malangori Abdulgani Parande, E-mail: drparandemalan@rediffmail.com

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ABSTRACT

Background: The rapid proliferation of information in the present era has important implications for the education and library usage of health professionals including medical students. **Objectives:** (1) To determine the extent of use of the library services and to compare the utilization of information technology (IT) services in the library among undergraduate and postgraduate students. (2) To discover problems faced by these students in the library and to suggest improvements of resources in the library. **Materials and Methods:** This was a cross-sectional study conducted among undergraduate and postgraduate students during January to February 2014. A predesigned and a pretested questionnaire were used. The data were tabulated and analyzed using Epi Info and MS Excel. **Results:** Out of 314 undergraduate students, 105 (32.2%) were daily user and out of 67 postgraduate students 43 (64.2%) were daily user of library services. The primary reason for going to the library was to study. The undergraduate students were spending significantly more time during exam days as compared to postgraduate students ($P < 0.002$) and opposite was true during nonexam days ($P < 0.03$). A majority of the students were satisfied about the library services while more than half of the students were not satisfied with the IT facilities of library. The inadequacy of learning materials, nonavailability of modern facilities and inadequate physical facilities in the library might have negative influence on the students in the library visit. **Conclusions:** The study suggests that fulfillment of more needs to be done to promote self-directed learning. The usage of library, its resources, and services needs to be increased.


KEY WORDS: Library Services; Utilization; Medical Students; Medical College; Information Technology Services

INTRODUCTION

Excellent medical colleges are essential to prepare doctors with good knowledge and skills. Teachers, laboratories, and libraries are important components in providing effective medical education. The main purpose of medical libraries is to support medical education, including teaching, research, and patient care. The objective of a health science library is

to assist medical professionals in enhancing and updating their knowledge and skills, and to provide them information regarding new innovations, views, theories, and latest treatment for better patient care, medical education, and research.^[1]

Over the last decades, studies have shown that the use of computerized information systems by medical professionals can improve the quality of care, enhance the use of evidence-based treatments, and maintain and update knowledge. In addition to formal classroom lectures, medical students must learn to collect information by their own efforts, to develop adequate professional competence.^[2] Although an institution may have the best stocked libraries, the utilization of the libraries by the students need not simply depend on the number of books and journals in the library.^[3] Many factors

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such as personal preferences, the general environment in the library, inconveniences of the working hours, and distance from the place of residence may influence the use of the library. There are differences in utilization pattern and concerns of library services among the undergraduate and postgraduate medical students. The effectiveness of a library as an instrument of learning is determined by the success with which it is able to provide the user with the information that he/she seeks.^[4] Any large institution should make an effort to find out the pattern of the utilization of the library, time to time. The feedback which is thus collected may help in formulating new policies and improving services and it will also give information about what is expected as against what is available.^[5] As very few studies were conducted about this matter in India as well as in Maharashtra and renovation of the central library of this tertiary teaching institute was done during the year 2006 for Diamond Jubilee celebration, so this study was undertaken among undergraduate and postgraduate medical students to determine usage pattern of the information resources, library services, and satisfaction of the user.

Objectives

1. To determine the extent of use of the library services
2. To compare the utilization of information technology (IT) services in the library among undergraduate and postgraduate students
3. To discover problems faced by these students in the library
4. To suggest improvements of resources in the library.

MATERIALS AND METHODS

This was a cross-sectional study conducted among undergraduate and postgraduate students of a tertiary teaching institute, in Western Maharashtra during January to February 2014. All undergraduate (1st year, 2nd year and 3rd year) and postgraduate students who were present at the time of study and willing to participate in the study were enrolled. A predesigned and a pretested questionnaire were used to collect data which includes sociodemographic profile of the students, library usage pattern, physical structure of library, usage of IT services of library, and hurdles in utilization of library services. The questionnaire was distributed to the undergraduate students in the classroom and for postgraduate students investigators distributed the questionnaires either at the beginning or end of a meeting for the departmental postgraduate academic activity. The undergraduate and postgraduate students completed and submitted the questionnaire during the same session. Principal investigator and coinvestigators explained the pro forma to all students. Permission of Institute Ethical Committee was taken. The data were tabulated and analyzed using Epi Info and MS Excel.

RESULTS

This study was done among the 326 undergraduate and 73 postgraduate medical students using a self-responding questionnaire. Mean age of undergraduate student was 19.8 years \pm 1.2 years while for postgraduate student it was 27.5 years \pm 3.2 years. The male to female ratio for undergraduate was 0.7:1 while that of postgraduate was 1.4:1. The majority, i.e., 264 (81.0%) and 58 (79.4%) were hostelite among the undergraduate and postgraduate, respectively.

Among the 326 undergraduate students, 314 (96.3%) have had ever visited library while among the postgraduate students 67 (91.8%) have had ever visited library of the medical college.

Out of these 314 undergraduate students, 105 (32.2%) were daily using the library services while the majority of 120 (36.8%) were visiting library once or twice in a week (Diagram 1). Among the 67 postgraduate students, the majority of 43 (64.2%) were visiting library daily while 15 (22.4%) were visiting library once or twice in a week.

When mean hours spent in the library was compared among these students, it was found that undergraduate students were spending significantly more time in the library during exam period as well as nonexam days as compare to postgraduate students ($P < 0.002$) (Table 1).

Out of 314 students who ever visited library, 255 (81%) visited for utilizing library services while only 9(3%) visited to utilize IT services of library while among the postgraduate students, 55 (82.0%) visited library for utilizing library services while only 2(3%) visited for utilization of IT services.

Objectives of visiting library were presented in Table 2, the major objective of visiting library was self-study in both undergraduate among 247 (78.6%) and postgraduate among 54 (80.6%) students followed by preparation of exam in 216 (68.8%) in undergraduate and in postgraduate in 48 (71.6%) students. It was found that there was a highly significant difference for all the objectives among undergraduate and postgraduate students. There was no significant difference for these objectives among male and female students.

Availability of Recent Editions of Required Books in the Library

Out of 314 undergraduate students utilizing library services, the majority of 198 (63.0%) had opinion that they were not always getting the recent editions of the text books while 60 (19.2%) said that they were never getting the recent editions of the text books especially during peak hours and only 56 (17.8%) told that they were always getting the current editions of the text books. Among the postgraduate students, the majority of 40 (59.8%) had opinion that they

Table 1: Comparison of time spent daily during exam and nonexam in the library between UG and PG student

Year of study	Mean±SD		Z value	P value
	Undergraduate (n=314)	Postgraduate (n=67)		
Time spent during exam period (h)	5.94±3.417	4.57±1.909	3.18	0.002
Time spent during nonexam period (h)	2.36±0.995	1.98±1.363	2.15	0.033

SD: Standard deviation

Table 2: Objectives of visiting library

Objectives of visiting library	Undergraduate (n=314)	Postgraduate (n=67)	χ^2 value	P value
Self-study	247 (78.6)	54 (80.6)	14.08	<0.0001
Preparation of examination	216 (68.8)	48 (71.6)	20.54	<0.0001
Updating knowledge	72 (22.9)	11 (16.4)	33.19	<0.0001
Patient care	50 (15.9)	20 (29.8)	6.28	<0.01
Research and publication	49 (15.6)	25 (37.3)	16.63	<0.0001
Not having personal books	27 (8.6)	6 (8.9)	53.18	<0.0001
Seminars	23 (7.3)	3 (4.5)	33.90	<0.0001

Table 3: Opinion about the facilities not available in the library

Library facilities not available in library	Undergraduate (n=314)	Postgraduate (n=67)	χ^2 value	P value
Location of library-difficult to access	10 (3.2)	3 (4.5)	0.33	0.56
Books-difficult to find out	52 (16.6)	14 (20.9)	0.72	0.39
Number of recent editions of books-inadequate	150 (47.8)	15 (22.4)	14.49	<0.0001
Displaying of journals-not well	77 (24.5)	30 (44.8)	11.21	0.001
Number of journals-inadequate	150 (47.8)	34 (50.7)	6.05	0.014
Number of seats-inadequate	238 (75.8)	61 (91.0)	7.60	0.006
Seating arrangement-uncomfortable	67 (21.3)	13 (19.4)	0.12	0.72
Light-inadequate	128 (40.8)	15 (22.4)	7.95	0.005
Ventilation-inadequate	110 (35.0)	10 (14.9)	10.35	0.001
Staff cooperation-inadequate	113 (36.0)	14 (20.9)	5.66	0.017
Drinking water-inadequate	127 (40.4)	17 (25.4)	5.34	0.021
Washroom facility- Inadequate	157(50)	23 (34.3)	5.44	0.02
Refreshment facility-inadequate	246 (78.3)	54 (80.6)	0.17	0.68

were not always getting the recent editions of the text books while 19 (28.3%) said that they were never getting the recent editions of the text books especially during peak hours and only 10 (14.9%) told that they were always getting the current editions of the text books.

Utilization of Journals and News Paper Section

Out of the 314 undergraduate students, only 34 (10.8%) were visiting the journal section. In contrast to this, 32 (47.8%) postgraduate students were visiting the journal section and is statistically significant ($P < 0.0001$).

Among undergraduate students, only 65 (20.7%) visited the newspaper section on daily basis while 108 (34.4%) never visited the newspaper section of the library. Among postgraduate students, only 15 (22.3%) visited the newspaper section on daily basis while 20 (29.8%) never visited the newspaper section of the library.

Opinion of the study population about the facilities not available in the library was revealed and was given in Table 4. To most of library users in this study, about physical facilities, 246 (78.3%) of undergraduate students opined that refreshment facility were inadequate while 238 (75.8%) said that number of seats were inadequate. Inadequacy of washroom facility and drinking water facility was reported by 157 (50.0%) and 127 (40.4%) of undergraduate students, respectively. The inadequacy was reported about learning materials like recent editions of books by 155 (47.8%) students, number of journals by 155 (47.8%) students and problem of accessibility by 77 (24.5%) students.

Among the postgraduate students, almost all, i.e., 61 (91.0%) said that number of seats were inadequate while 54 (80.6%) opined that refreshment facility was inadequate. About the learning materials like no. of journals in library 34 (50.7%) postgraduate students complained of inadequacy while about recent editions of book 15 (22.4%) said that books

were inadequate. This might have negative influence on the students in library visit. When these opinions about the facilities available in the library were compared among the students, it was found that the opinions like number of recent editions of books ($P < 0.0001$), displaying of journals ($P = 0.001$), number of journals ($P = 0.01$), number of seats ($P < 0.006$), light ($P = 0.005$), ventilation ($P < 0.001$), staff cooperation ($P = 0.01$), drinking water facility ($P = 0.02$), and toilet facility ($P = 0.02$) differ significantly while there was no significant difference for other opinions among the students. There was no significant difference about opinions among male and female students.

Among the 314 undergraduate library users, 122 (38.8%) have had ever used IT service of library, out of these only 9 (7.3%) were using these IT services daily. Out of 67 postgraduate students, 24 (35.8%) have had ever visited IT service of library, among these only 4 (5.9%) were using it daily.

The majority of undergraduate students, i.e., 96 (30.6%) and 203 (64.6%) opined that they are fully satisfied or partially satisfied about their objectives in the library, respectively, while among the postgraduate students, 13 (19.4%) fully satisfied and 49 (73.1%) were fully satisfied with their achievement of objective in the library (Table 4). The majority of 275 (87.6%) among undergraduate and postgraduate 39 (58.2%) were fully satisfied with the timings of the library, and the difference was highly significant ($P < 0.0001$) between undergraduate and postgraduate students.

For IT services of library, among undergraduate only 18 (5.7%) were fully satisfied with IT services and the majority of 153 (48.7%) were not at all satisfied with the IT services of library. Among the postgraduate students, only 3 (4.5%) were fully satisfied and 44 (65.6%) were not at all satisfied with IT services of library.

Recommendations for library facilities and IT facilities suggested by the students were presented in Table 5. It was found that major recommendations for library facility by the undergraduate students were number of seats to be increased 84 (26.7%), adequate ventilation 73 (23.2%), and increase number of recent editions of books 67 (21.3%) while the major recommendation for IT facility was free Wi-Fi 33 (10.5%) and uninterrupted internet connection by 21 (6.7%) students. The major recommendations suggested by postgraduate students for improvements in the library services were number of seats to be increased by 22 (32.8%) students, increase number of recent editions of books by 17 (25.4%) students while the major recommendation for IT were free Wi-Fi by 22 (32.8%) and uninterrupted internet connection by 13 (19.4%) and awareness of IT services created by 19 (28.3%) students. There was a significant difference for all recommendations suggested by the undergraduate and postgraduate students for library facilities and also for IT facility recommendations, i.e., awareness of IT services should be created among the students.

DISCUSSION

The essence of a library is to satisfy the needs of its users.^[6] In this study, 105 (32.2%) undergraduate students were daily visiting the library while among the postgraduate students 43 (64.2%) were daily visiting the library. There was a significant difference between mean hours spent in the library; undergraduate students were spending significantly more time in the library as compare to postgraduate students. The main purpose of students visiting library was self-study followed by preparation of exam. If we compare usage figures for journal section, a significant higher utilization was seen by postgraduate students as compared to undergraduate students ($P < 0.0001$). Newspaper section was highly underutilized by both undergraduate and postgraduate students. The majority of the users in this study expressed their dissatisfaction which focused on some physical aspects such as limited space in the

Table 4: Level of satisfaction of library facilities and IT facilities among undergraduate and postgraduate students

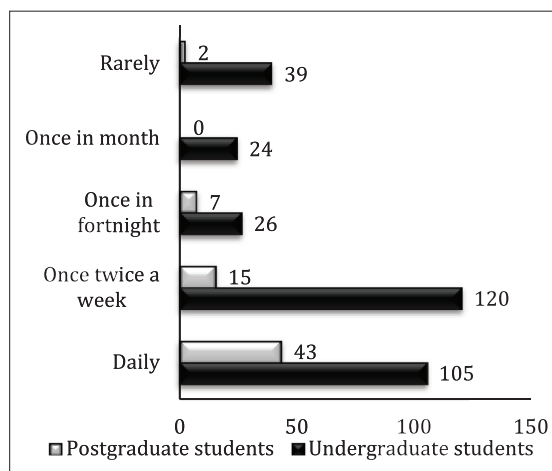
Level of satisfaction	Undergraduate (n=314)	Postgraduate (n=67)	χ^2 value	P value
Achievement of objectives in the library				
Fully satisfied	96 (30.6)	13 (19.4)	3.7	0.15
Partially satisfied	203 (64.6)	49 (73.1)		
Not satisfied	15 (4.8)	5 (7.5)		
Timing of library				
Fully satisfied	275 (87.6)	39 (58.2)	52.2	<0.0001
Partially satisfied	9 (2.9)	18 (26.7)		
Not satisfied	30 (9.5)	10 (14.9)		
IT facility				
Fully satisfied	18 (5.7)	3 (4.5)	1.5	0.47
Partially satisfied	72 (23.0)	20 (29.8)		
Not satisfied	224 (71.3)	44 (65.6)		

IT: Information technology

Table 5: Recommendations of library facilities

Recommendations	Undergraduate (n=314)	Postgraduate (n=67)	χ^2 value	P value
1. Library facilities				
Number of seat to be increased	84 (26.7)	22 (32.8)	51.08	<0.0001
Comfortable seating arrangement	40 (12.7)	11 (16.4)	61.17	<0.0001
Adequate ventilation	73 (23.2)	8 (11.9)	24.41	<0.0001
Adequate lighting	33 (10.5)	7 (10.5)	50.27	<0.0001
Increase staff cooperation	7 (2.2)	6 (8.9)	144.40	<0.0001
Drinking water facility	12 (3.8)	5 (7.5)	90.24	<0.0001
Toilet facility	8 (2.5)	3 (4.5)	84.25	<0.0001
Refreshment facility	23 (7.3)	3 (4.5)	33.90	<0.0001
Separate section for boys and girl	5 (1.6)	4 (5.9)	139.08	<0.0001
Increased recent edition books	67 (21.3)	17 (25.4)	52.69	<0.0001
Control of arthropods	12 (3.8)	0		
Referral section to be opened beyond working hours	0	6 (8.9)		
2. IT facilities				
Awareness of IT services should be created	24 (7.6)	19 (28.3)	3.63	<0.001

IT: Information technology

**Diagram 1:** Frequency of library use

reading room, refreshment facility, washroom facility, and drinking water facility. Further analysis which compares the usage and opinion between undergraduate and postgraduate students showed significant differences. Many users of this study expressed their dissatisfaction about internet facility, email facility, A-V methods, etc., (IT facilities).

The observations made from our study were more or less corroborative of other studies.^[7-9] As the postgraduate students are gainfully employed in patient care round the clock and were busy, hence getting less time for their other activities like visiting library. In a study conducted in Kolkata,^[8] authors found that 46.3% of undergraduate students were daily user of library while in another study^[10] 40.9% were daily library users which were higher than the findings of this study while in a study of North India^[3] only 20.5% daily users of library were there. In a study conducted in university, only 10.5% postgraduate students were daily users.^[11] A study conducted in Bihar,^[4] showed 90% students visited library for self-study.

The authors found that there was a need to train and motivate students to make better use of library services. It looked that journals were underutilized by undergraduate students. This difference was expected since research was a part of the curriculum for the postgraduate students. In a similar study by Chatterjee et al.,^[8] only 8.6% of the students were found to visit the journal section in the medical colleges. It is important from the point of view of the personal comforts of library users, to have excellent toilet facilities, arrangements for drinking water and even refreshments in the library premises.^[5] Dissatisfaction of IT facilities usage was also the major area of concern of some other studies.^[8,10-13] In today's world of study, these modern facilities have immense role to enhance and update knowledge of students. In other words, if the library is to satisfy the needs of the students most of its services will have to be internet based. There is a need and scope for orientation of medical students about effective use of library. This has been amply highlighted by Lal and Ingle^[9] who emphasized about a need to train and motivate the students to make better usages of library resources.

This study tried to take comparative opinions of both undergraduate students and postgraduate students of the Institute. In this study, we could able to contactless number of postgraduate students as compared to undergraduate students, as due to their busy schedule were not available or not willing to enroll in the study.

CONCLUSION

Although most of the undergraduate and postgraduate students do utilize the library services, many of them seem to be using the standard textbooks, without making use of the other available facilities such as medical journals and electronic medical databases and IT facilities should be

facilitated as well. There is also a need to improve the stock of the commonly read books and to pay some more attention to the conveniences and comforts in the library. The findings of this study were shared with college administrator who agreed to increase the facilities and services of weaker areas.

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